DOCUMENT RESUME

ED 262 927 RC 015 453

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TITLE Teaching and Learning at Home: Distance Education and the Isolated Child. Research Series No. 4.

INSTITUTION National Centre for Research on Rural Education, Nedlands (Western Australia).

SPONS AGENCY Queensland Dept. of Education, Brisbane (Australia).
PUB DATE 85
NOTE 133p.
PUB TYPE Reports - Research/Technical (143)

EDRS PRICE MF01/PC06 Plus Postage.
DESCRIPTORS Audiovisual Communications; *Childhood Needs; Communications Satellites; Correspondence Study; Curriculum Design; *Distance Education; Educational Radio; Elementary Education; Foreign Countries; *Home Instruction; Learning Processes; Material Development; Parent Attitudes; *Parent Participation; Questionnaires; Student Attitudes; *Tutors
IDENTIFIERS *Australia; Australia (Northern Territory); Australia (Queensland); Australia (Western Australia); *Isolation (Geographic); School of the Air (Australia)

ABSTRACT

This report of a study of 36 Australian families involved in distance education suggest ways to improve learning materials and cautions that more needs to be known about how children learn in isolation before new communication technologies can be used effectively. Researchers interviewed parents, pupils, and home tutors--mothers or governesses, observed 68 preschool through year 7 pupils, and evaluated daily lesson diaries. Family characteristics, facilities available for schooling, and qualifications of home tutors varied widely. Found to be important in designing distance education materials were: physical context of schooling, amount of home tutor support, way time was managed, family characteristics, and multiple interactions of home tutors with pupils. Home tutors were found to be crucial in scheduling and structuring schooling, generating enthusiasm and persistence, and mediating between pupils and learning materials. Suggestions to improve distance education include changing assumptions about children's capacity to work independently, home tutor skills, and how materials are integrated in the field; creating more interesting and directional learning materials; and using flexible new communications technologies with clearly assigned functions in the learning process. Tables and figures amplify the text; research instruments, family profiles, and schoolwork schedules make up the appendices. (LFL)

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Teaching and Learning at Home : Distance Education and the Isolated Child

Derrick Tomlinson
Frank Coulter
Jane Peacock

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Research Series No. 4
National Centre for Research on Rural Education

THE UNIVERSITY OF WESTERN AUSTRALIA

RC015453

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Derrick Tomlinson
Frank Coulter
Jane Peacock

National Centre for Research on Rural Education
The University of Western Australia
Nedlands, Western Australia

1985

This research was funded by the Advisory Committee on Educational Uses of Communications Technology and the Education Departments of Queensland, Western Australia and the Northern Territory

First published in 1985
by National Centre for Research on Rural Education
The University of Western Australia
Nedlands, Western Australia

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National Library of Australia Cataloguing-in-Publication data

Tomlinson, Derrick, 1941- .
Teaching and learning at home.

ISBN 0 86422 035 9.

1. Distance education—Australia. 2. Education, Elementary—Australia. 3. Education, Rural—Australia. I. Coulter, Frank, 1936- . II. Peacock, Jane, 1942- . III. University of Western Australia. National Centre for Research on Rural Education. IV. Title. (Series: Reserch series (University of Western Australia. National Centre for Research on Rural Education); no. 4).

371.96'7

The ISSN for the National Centre for Research on Rural Education's *Research series* is: ISSN 0729-9230.

ACKNOWLEDGEMENTS

This research was possible because thirty-six families allowed a stranger into their homes to pry into matters affecting their daily lives and the education of their children. Of course, they must remain anonymous. Their part in this research is acknowledged and we wish to convey to them our thanks.

Members of a steering committee provided invaluable support at critical stages in developing the research methodology and in preparing this report. They are:

> Dr Norman Bowman, Senior Research Officer, Education and Assessment, Northern Territory Department of Education
>
> Mr Brian Gaines, Assistant Director Rural Education, Education Department of Western Australia
>
> Mr Ted Hobbs, Senior Education Officer, Research Services Branch, Department of Education, Queensland
>
> Mrs Mary Walsh, Mileura Station via Cue, Western Australia.

Other support and advice was offered by principals of the four schools of the air involved in the study. We wish to thank Ms Helen Shannon, Charleville School of the Air, Mr Frank Johnson, Kalgoorlie School of the Air, Mr Peter Miller, Meekatharra School of the Air, and Mr Mike Forster, Katherine School of the Air. We hope that they find this report as useful to them as we found their assistance invaluable to us.

Mr Ivan Peacock gave up seven weeks of his accumulated annual leave to travel with his wife, Jane, through remote areas of the Eastern Goldfields and the Murchison districts in Western Australia, and over vast areas of the Northern Territory. His companionship relieved the pressure of travel and enabled Jane to concentrate on her principal task of data gathering. We are grateful to Ivan for his voluntary assistance.

Finally, we wish to thank Mrs Polly Edwards who typed several drafts of research instruments, dozens of letters and at least four drafts of this report. If other than her tenosynivitis was aggravated, she never revealed it to us.

Derrick Tomlinson
Frank Coulter
Jane Peacock

TABLE OF CONTENTS

			Page
		Acknowledgements	iii
		List of Tables	vi
		List of Figures	vii
CHAPTER 1		INTRODUCTION	1
	1.1	Rationale	1
	1.2	The Pilot Study	3
	1.3	Approach to the Research	5
CHAPTER 2		THE RESEARCH METHOD AND THE FAMILIES STUDIED	9
	2.1	The General Approach	9
	2.2	The Interview Schedule	10
	2.3	Lesson Observation	10
	2.4	The Daily Diary	12
	2.5	The Families Studied	13
CHAPTER 3		MANAGING PEOPLE, PLACE AND TIME	17
	3.1	A School in the Home	17
	3.2	Four Contexts of Schooling	21
	3.3	Managing Time	24
	3.4	Commentary	29
CHAPTER 4		LEARNING AND TEACHING AT HOME	40
	4.1	The Distance Teaching Process	40
	4.2	Participation in Lessons by Pupils and Their Home Tutors	41
	4.3	Problems with Schoolwork	44
	4.4	Commentary	50
CHAPTER 5		PRIMARY DISTANCE EDUCATION AND COMMUNICATIONS TECHNOLOGY	60
	5.1	The Nature of Primary Distance Education	60
	5.2	The Child as an Independent Learner?	64
	5.3	Enhancing Primary Distance Education	66
	5.4	The Place of Communications Technology	68
	5.5	Perceptions of Future Uses of Technology	72
	5.6	Some Suggestions for the Future	73
		Flexibility in curriculum materials	74
		Discrete functions of communications media	75
		Improving the quality of instruction	76
REFERENCES			78
APPENDICES			
	A	The Research Instruments	81
	B	The Families Studied	117
	C	Daily Schedules of Schoolwork for the Thirty-Six Families	121

The previous numbered page in the original document was blank.

LIST OF TABLES

TABLE		Page
1	Pupils in the Study by State and Year of Schooling	8
2	Highest Level of Education Completed by Parents	14
3	The Number of Pupils and Families Employing a Governess	15
4	Distances of Families from Schools of the Air	16
5	Frequency of Responses to the Question 'How Often Does the Child Work Unattended?'	42
6	Frequency of Responses to the Question 'How Often Does the Child Work Alone but Supervised?'	42
7	Numbers of Children at Three Levels of Schooling Who Have Trouble with Selected Aspects of Schoolwork	46
8	Problems Experienced with Integration of Air Lessons and Correspondence Lessons	70
9	The Use of Loan Videos	70

LIST OF FIGURES

Figure		Page
1	Advice to Home Tutors	18
2	The Location of Learning Space in the Home	20
3	Air Lesson Timetables - Kalgoorlie and Charleville Schools of the Air	26
4	Routine in the Urban Classroom Context	32
5	Routine in the Modified Urban Classroom Context	34
6	Routine in the Integrated Context	36
7	Routine in the Solitary Learner Context	38
8	Participation in Lessons in the Urban Classroom Context	54
9	Participation in Lessons in the Modified Urban Classroom Context	56
10	Participation in Lessons in the Integrated Context	58
11	Teaching: Triadic and Dynamic	62
12	A Model of Distance Teaching	63

CHAPTER 1: INTRODUCTION

1.1 RATIONALE

1.1.1 For some three and a half thousand children living in geographically isolated locations scattered throughout Australia primary education means learning at a distance. The bulk of their formal primary education is undertaken at home. None of them has reasonable daily access to an appropriate school; some have daily radio contact with school-of-the-air teachers, but they can be up to a thousand kilometres away; and all of them rely upon the regular exchange of learning materials between themselves and their correspondence teachers. In primary distance education the principal medium of communication continues to be print and post.

1.1.2 A number of questions may be raised about the likely effectiveness of distance teaching materials developed for those children. Fundamental issues such as how learning materials are processed by pupils in isolated contexts have yet to be explored. A major premise upon which distance teaching proceeds is that the child can, with the guidance of a home tutor [illegible] prepared and despatched by the distance teaching unit, [illegible] function with a degree of autonomy which is seldom demonstrated by children in regular classrooms. This autonomy includes not only the development of a wide range of reading skills and learning strategies, but also the ability to organise and use unstructured time in a manner which is compatible with the availability of parent help, generator power and broadcasting times. It also includes the development of persistence and the capacity to deal with multi-modal presentation of instructional materials by way of print-audio-video mixes.

1.1.3 The opinion of parents appears to be strongly supportive of the premise of a three-way interaction between the distance education teacher, the pupil and the home tutor. They see it as essential. At least one of them has claimed publicly that primary pupils cannot be considered as independent learners able to work unaided: 'They require someone to be immediately available - to interpret the lessons, to motivate them, to stimulate them, and to provide the immediate feedback which is essential for the learning process at a young age'.[1] In fact although something is known about remote schools, little is known about remote learners and the way they cope with school learning without the

direct help of a teacher.[2] It is known that primary distance education depends on the heavy involvement of parents as supervisors, especially early in the school program.[3] It may be assumed that the development of learning strategies depends very much upon the quality of parent input and upon the incidental or explicit teaching of those strategies through the materials developed by the distance teaching unit. However, the expectations that appropriate learning skills will develop might be akin to those which relate to the development of similar skills by children in normal classrooms. There the matter often is left to chance.[4]

1.1.4 The proposition here is that prior to the development of primary distance education materials which make use of new communications technology, more needs to be known about how children learn in isolated situations, and what learning skills can reasonably be assumed to have been developed at various stages in the educational program. Without that knowledge there is a danger that more attention may be given to the development and purchase of technology for communication than to the way in which materials transmitted will be processed by the recipients.

1.1.5 In order to advance that proposition, this study was undertaken to seek some answers to the following questions:

(i) What problems do primary age children experience as learners in distance education contexts? (For example, physical characteristics of the learning environment, availability of supervision, management of time, interpretation of instructions, maintaining continuity and motivation, dealing with multi-modal teaching-learning systems.)

(ii) What learning skills should be incorporated as a sequenced aspect of the primary distance education curriculum?

(iii) Which of these learning skills should be taught explicitly or taught incidentally?

(iv) How can parents and/or home tutors best participate in and contribute to the development of learning skills?

(v) What problems do parents and/or home tutors predict in relation to programming of curricula via satellite transmission?

1.1.6 Because the focus of this research was the pupil in his home environment, it was decided early that an appropriate way to proceed was through observation and interview *in situ*. Previous research which analysed enrolment data from the relevant schools and factual and subjective data gathered from parents through mailed questionnaire had

provided comprehensive information about the nature of the population of primary distance education.[5] A great deal was known about pupil characteristics and the perceived effectiveness of general and tutorial support services provided through correspondence schools and schools of the air. The way in which pupils and their home tutors managed their distance education materials, correspondence lessons, school of the air lessons, and audio-visual learning aids had not been subjected to detailed analysis. Reliable professional knowledge has been accumulated by distance education teachers, but this research was concerned to examine the way school learning proceeds in the distance education pupils' homes rather than to survey the opinions of teachers about how it proceeds. Further research might provide worthwhile information about the extent to which the perceptions of parents and home tutors match those of the distance education teachers.

1.2 THE PILOT STUDY

1.2.1 Before the main study commenced a pilot study was carried out in the Murchison and Gascoyne areas of Western Australia to establish the focus of the research and to develop and trial reliable research instruments. Ten families were visited on two separate occasions. The first was largely an exploratory survey. Four families, who between them had experience of primary distance education ranging from three years to seventeen years duration, cooperated by allowing a researcher into their homes. The interactions of home tutors and the children were observed, the management of time, personnel and physical resources were discussed and noted, and parents talked freely and honestly about using distance education materials and school-of-the-air lessons. The main aim was to gain first hand impressions of how distance education was handled in the homes. A subsidiary purpose was to gather information about possible problems faced by home tutors and pupils in isolated contexts. By observing the teaching and learning practices within the homes, the 'learning milieux', the researchers were able to refine ideas about appropriate research strategies.

1.2.2 With this information and a review of relevant literature as background, the approach to the research was developed. For the purposes of the pilot study alternative forms of three types of instrument were constructed and tried. The first was a pro-forma of a questionnaire which included closed and open-ended questions. Many of them subsequently were rephrased or discarded. They sought factual information and subjective opinions from parents and home tutors. Three

forms of a lesson observation schedule were prepared and two alternatives for a daily diary of lessons were laid out. Each of these was used and progressively modified in visits to six families in the Gascoyne region. Further information about the final form of the research instruments will be presented later.

1.2.3 Opportunity was taken during the pilot study to practise interview techniques to be used in the major study. Respondents were asked for critical comments about the nature of questions asked and the interviewer's approach. Tape-recorded interviews were listened to, and different ways of eliciting information or seeking responses were practised. At the same time the researcher developed confidence as the interlocutor in interview situations. She was alerted to cues to pursue for relevant information or, alternatively, to be circumspect where the subjects showed discomfort in talking about particular topics. Through these procedures of practice and progressive modification of the schedule the interview developed as a dialogue rather than an instrument for objective information processing.

1.2.4 While an essential core of information was sought in every case, the diversity and flexibility which had to be built into the interviews meant that the data could not be coded effectively in advance. The post-coding proved to be a worthwhile means of controlling the subjectivity which is unavoidable in personal interviews.

1.2.5 Even during the pilot study contrasts emerged, but their full significance was not appreciated until the main research was completed. The contrasts were strong. For example, one lone child was observed working in a dismal transportable 'schoolroom' of metal construction and without windows to allow in any slight shifts of the breeze or through which he could look for occasional relief. The interior was stark with very little in the way of decoration to stimulate his imagination or to chart his progress as a learner. He was left to a governess who did not seem to appreciate that before he could 'catch up' in his mathematics he needed remediation in basic number facts. Not only was he behind in the number of sets completed, but he demonstrated poor understanding of concepts which he should have mastered in the previous two years.

1.2.6 That situation contrasted with the family which was totally involved in the process of schooling. The father was supportive and accommodating, and as proud of his wife's achievements as of those of his children; the mother had rediscovered a joy of learning and passed her enthusiasm on to her children; and the three children had pride in

their work, were keen to show what they had done, and were quite happy after having greeted their visitors to go back and continue working unsupervised in their bedroom-cum-schoolroom while their parents were interviewed in the kitchen. For that family the loan video program sent out from their school of the air was a medium for family education after the evening meal.

1.2.7 Standing alone, these contrasting situations may have been regarded as depressing or stimulating. But placed in the context of research they signalled the need for flexibility of approach. While the focus of the research was the procedures for distance learning, each home, and therefore each learning situation, was different.

1.2.8 From the outset the notion of the child as an autonomous learner in primary distance education was challenged. Even though the sample of ten families in the pilot study could not be regarded as representative, it offered the strong observation that the home tutors are integral to distance teaching. They do not merely 'supervise' lessons, but interact with the children at every stage of the learning. The consensus of opinions was that they had to be present most of the time to help children interpret the curriculum materials. In the early years, before children have learned to read, all instructions have to be interpreted for them. Even later home tutors find it necessary to check constantly that children have understood the instructions for their lessons and that they are concentrating on their set tasks.

1.3 APPROACH TO THE RESEARCH

1.3.1 The principal research was carried out with the cooperation of thirty-six families whose children were enrolled at the Charleville, Kalgoorlie, Meekatharra and Katherine schools of the air. The approach included on-site observations with semi-structured interviews and diary records. In this way a cross-section of the contextual features of distance teaching and learning was obtained. Major limitations of the study were the relatively small sample of families and the short time span of distance learning which could be observed and recorded. Studies over a longer period of time with a larger and more carefully structured sample of participants might produce more detailed information for testing some of the observations made here.

1.3.2 Information sought in interviews, observation or diary records included:

(i) the characteristics of distance education materials which pupils and their home tutors found helpful/unhelpful;

(ii) study patterns of isolated pupils, in particular their organisation and management of lesson times;

(iii) the physical environment of the places of study and its effect upon the learning activities;

(iv) teaching strategies used by home tutors in relation to different subjects and different media, print, radio and video;

(v) opinions about the use of communications technology in primary distance education.

This information was sought as a basis for suggestions about future curriculum development. In particular it might suggest advice about teaching and learning strategies which might be employed for distance education of geographically isolated children.

1.3.3 Queensland, Western Australia and the Northern Territory were chosen for the project because children enrolled in their schools of the air represent some of the most isolated primary school pupils in Australia. The families visited lived an average distance of 260 kilometres, ranging from 60 to 540 kilometres, from their respective schools. While that posed some logistical problems for the research, geographical isolation from the mainstream of educational services was a key problem for investigation. Travelling great distances not only was unavoidable, but it was necessary to appreciate the nature of the isolation which is characteristic in the lives of these people.

1.3.4 The schools of the air in the two states and the Northern Territory also offer different organisational structures for consideration. In Queensland all primary distance education pupils are enrolled at the Primary Correspondence School in Brisbane. Teachers at that school are responsible for all aspects of the children's distance education. Learning materials are despatched from Brisbane and completed sets of lessons are returned to the school for marking and feedback. The schools of the air provide 'air' lessons only. They are designed to reinforce correspondence lessons papers and to promote oral language and communication skills. In Western Australia and the Northern Territory the schools of the air have functional autonomy and are totally responsible for the educational programs of their pupils. Whereas schools in the Northern Territory develop and use their own curriculum and learning materials, in accordance with the requirements of the core curriculum approved for Northern Territory schools, in Western Australia the schools of the air make use of materials developed and distributed by the Distance Education Centre in Perth. They

incorporate learning materials used in all primary schools in the state. Schools have freedom to organise, modify and supplement curriculum materials as they see fit, and the schools of the air have been innovative in adapting the curriculum and learning resources to the peculiar circumstances of their pupils.

1.3.5 Clearly these different organisational structures might have some bearing upon the perceptions of distance education held by teachers and their clients. In every case, therefore, schools of the air were visited. The project was discussed with principals and teachers. Background information about the educational programs and organisational details of the schools were gathered. In all cases but one home visits took place after the meetings with school teachers and principals. No discussion was entered into about individual children or their families. At all times the confidentiality of privileged information was protected.

1.3.6 The research assistant for the project had principal responsibility for gathering the data for the study. She journeyed considerable distances in each of the two states and the Northern Territory. In all eighty-two days were spent in field work and a minimum of two days was spent with each family. The field work extended over a period of five months, from April to August. Many of the seasonal variations which affect lessons in the homes, and shifts in emphasis of the curriculum at particular stages in the school year, were encountered. In effect, the duration of the field work meant that those factors of variability in the distance education program were randomised in the study. Interviews were recorded for detailed analysis at a later stage in the research program. Observation schedules were completed for each child and the interactions of the children and their home tutors were recorded. Diaries of daily lessons, their duration, and the activities engaged in by the children and their home tutors were maintained for a week following the visits by the researcher and subsequently returned by mail.

1.3.7 The research design originally had sought a sample of three isolated pupils in each year of primary schooling at the four schools of the air. Hence the structure of the sample was to be 3 x 7 years x 4 schools = 84 pupils and their 84 home tutors. It proved impracticable within the constraints of time and resources available. Three matters caused the sample to be revised:

- Few children undertake all of their primary education at schools of the air. There is a significant decline in enrolments after year 5.[6] This meant that it was not possible to obtain the intended numbers of pupils in years 6 and 7.
- Because there were only small numbers of children enrolled at Kalgoorlie and Meekatharra schools of the air (39 and 53 pupils respectively, excluding pre-primary, at the time of this research) they were treated as a single school for the purposes of sampling.
- The study relied upon the cooperation of families who were willing to be subjects of research. It involved a stranger entering their homes and being made privy to otherwise private aspects of the families' daily living. The researcher stayed with and observed them for two days. This meant that the families had to volunteer to participate and the sample had to be chosen from those who made themselves available. The response to requests for volunteers reflects the concern of isolated families for the education of their children. Even so it meant that the sampling was not as controlled as might be desired and bias might be detected. The procedures of data analysis attempted to minimise its effect.

1.3.8 The final sample for detailed investigation is summarised in Table 1. Further information on the characteristics of the children and their families will be presented in the following chapter.

TABLE 1: PUPILS IN THE STUDY BY STATE AND YEAR OF SCHOOLING

	Pre-School	Transition	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7	Total
Queensland			3	2	2	3	6	2	1	19
Western Australia	1		5	2	2	3	-	3	2	18
Northern Territory	3	5	2	2	3	6	6	1	3	31
	4	5	10	6	7	12	12	6	6	68

CHAPTER 2: THE RESEARCH METHOD AND THE FAMILIES STUDIED

2.1 THE GENERAL APPROACH

2.1.1 It is generally accepted in primary distance education that a suitable adult should be present to 'supervise' correspondence lessons. Most often it is the mother of the child, but occasionally it is an employed governess or tutor. The extent to which she might be involved in 'teaching' is disputed. Fitzpatrick posed it as 'the conundrum of who teaches': '...the parents, or hired governesses are intimately involved in the day to day supervision of their child's correspondence lessons. They in fact spend more time supervising their children - teaching them in essence - than does the school-of-the-air "teacher"'.[1] Whatever the resolution of that conundrum, it is obvious that the responsible adult ensures that the child's learning progresses according to the directions of the school.[2] In recognition of this the term 'home tutor' rather than the more commonly used 'home supervisor' is preferred and will be used consistently in this report.

2.1.2 Through her constant involvement the home tutor probably learns more than any other person about the child's ability to cope. 'In combining the roles of teacher, mother and homemaker, the mother is in a position to know more about her child's overall integration of formal and informal education than teachers and parents in the traditional home-classroom dichotomy.'[3] For that reason home tutors were regarded as a primary source of information for this study. Because of the limitations referred to earlier of on-site data collection in a single and brief period, the home tutor's recounting of the way distance education materials are used, the development of the child as a learner, and periodic or seasonal changes in the organisation of the learning program at home was of singular importance.

2.1.3 Of course it can be argued that heavy reliance upon information from such a source might lead to bias in the research findings. For a variety of reasons mothers might not be able to distance themselves from their children's needs sufficiently to offer an objective appraisal. This is a popular criticism of interview research techniques, and one which the researchers took account of. Where possible governesses and parents were interviewed separately and the opinions of the children themselves were sought. Processing the interviews after the event, removed both in terms of time and distance, was an effective way of

controlling bias. Recorded interviews were analysed by the interviewer and one of the researchers who had not been present.

2.1.4 A second means of control was to collect other evidence through participant observation and written records. The three sets of data offered composite evidence of the way distance education functions at home. The conclusion reached by the researchers was that the accounts offered by home tutors were honest, and in many instances disarmingly so.

2.2 THE INTERVIEW SCHEDULE

2.2.1 Four versions of the interview questions were developed, the last after trialling in the pilot study. It sought forty-eight items of information under eight headings. A copy of the interview schedule is included in Appendix A. The first two sections, The Family and The Family Home, sought background information and were completed before the interview commenced. The other six sections sought detailed answers to general questions: Who tutors the child? How is time managed? What does the home tutor do? What does the child do? What does the school of the air/primary correspondence teacher do? Anything else? In the last section parents and governesses were encouraged to give their own opinions about any aspect of primary distance education which they thought had been overlooked or not given proper attention in the interview.

2.2.2 While that formal structure was necessary to ensure uniformity of information, there had to be considerable latitude in applying it. During the pilot study it was apparent that some people were intimidated by the researcher sitting opposite them making notations on a sheet of paper which they could not read. During the major project subjects were shown a copy of the schedule in advance and it was not referred to again. The interviews proceeded as seemingly unstructured dialogues. This encouraged rapport and allowed the researcher to probe issues as they were presented, rather than to delay to the appropriate stage suggested in the pro forma. Data were transcribed onto the schedule after the interviews were completed and when the subjects were not present.

2.3 LESSON OBSERVATION

2.3.1 The observation schedule was deliberately simple. A copy is presented in Appendix A. Each lesson was divided into three sections and the separate activities of the child and home tutor and their interactions at each stage were observed and subsequently noted. Since

the behaviour of siblings, either younger children who were below school age and competing for attention or other children of school age who were engaged in separate learning activities, might influence what the pupil and home tutor do during lessons, their behaviour was noted when it impinged upon lessons.

2.3.2 There was a deliberate decision to follow a largely unstructured approach to lesson observation. Conventional procedures which quantify patterns of interaction, independent work, non-instructional use of pupil time, and so on, were inappropriate because of the variable and unconventional nature of the teaching-learning contexts observed. The nature of the schoolrooms could not be predicted here. The pilot study had shown that their physical characteristics were quite varied. This proved to be even more so in the major study when nearly four times as many families and homes were involved. The locations, dimensions, layouts and furnishing of the schoolrooms were different in every case.

2.3.3 There were also markedly different social environments from those of conventional classrooms. Most often the interaction observed was between a mother and her child. Even where a governess was employed her relationship could not be characterised as typical of that of a professional teacher and classroom pupils. Most often she lived within the family and usually formed a familial bond with her charges. In either case the social environment of the group of peers was lacking. Apart from the intrusion of siblings the interaction was one-to-one between the pupil and the home tutor. It was strengthened by the factor of isolation.

2.3.4 Visitors are infrequent for most geographically isolated families and the presence of the researcher in the schoolroom was a unique experience for most children. By its exceptional nature it was a potentially distracting intrusion into the accustomed routine. Care had to be taken to minimise its effect. Before entering the classroom the researcher spent time in becoming familiar to the children and the home tutor, and gaining their confidence. In the schoolroom she either joined in or watched quietly, depending on the nature of the lesson and the expressed preferences of parents, and the researcher had to react to each set of circumstances.

2.3.5 Because of all of these peculiarities of distance education, observation forms which had demonstrated reliablity elsewhere could not be used here. It was necessary to construct a special observation schedule and train the researcher in its use, or to opt for a less

formal technique. The latter was chosen. There were neither time nor resources available to develop, trial and validate a detailed observation schedule and an informal approach proved satisfactory for the purposes of this study.

2.3.6 Each child was observed in three different types of lessons: an 'air' lesson, English (or language arts), and mathematics. The air lesson was the only one in which 'technology' (that is, a radio transceiver) could be observed being used by all pupils. They had access to loan video programs, but most frequently these were used in the late afternoons or evenings as supplementary or enrichment materials. Seldom were they observed being used as integral parts of correspondence lessons and there was little opportunity to assess their effectiveness used in that way. Notwithstanding that limitation, they were obviously well received and highly regarded as extensions of the conventional correspondence lessons.

2.3.7 English and mathematics lessons were chosen because it was thought that they might employ different instructional strategies and learning styles. The one is usually more self-directed and exploratory and the other sequenced and formulated. It was expected that by observing all pupils operating in the same curriculum areas it might be possible to identify common approaches. As it will be seen in a later section of this report, this proved not to be the case. Individual differences among the children meant they tackled each lesson differently and with varied enthusiasm. The diversity was complicated by the range of year levels in the sample. Each pupil was operating at the appropriate level for his or her age and, while there were some common factors in the management and organisation of lessons, their subject matter was seldom the same.

2.4 THE DAILY DIARY

2.4.1 The daily diary of lessons sought information about what the home tutor and the pupil did before, during and after lessons. The activities of both were requested so that comparison might be made between actual time devoted to lessons and notional time tables and organisation of lessons described in interviews. It was expected that daily records of activites which home tutors and pupils engaged in would indicate the extent of interactive learning, home tutor directed learning and pupil self-directed learning, the amount of time the children worked alone or with incidental supervision, and the time home tutors devoted to other-than-school activities around the home. Diaries

were to be maintained by home tutors but in some cases the children kept their own. A sample of a completed diary is presented in Appendix A.

2.4.2 Even though the request was for diaries to be kept for the week immediately following the researcher's visit, this was not always possible. Follow up letters were sent, and twenty-nine families eventually returned transcripts of a week's activities (that is, a response rate of 81 per cent). One family no longer had children on distance education at home, and six others either apologised for non-return or did not respond at all.

2.4.3 It will be clear in Chapter 3 that analysis of the diaries and interview records indicated disparity between the daily organisation of lessons and notional timetables. This will be discussed later, but it is testament to the competing demands which intrude into the teaching and learning program at home. It has important implications for the structure and sequence of primary distance education materials.

2.5 THE FAMILIES STUDIED

2.5.1 It cannot be claimed that the thirty-six families in this study were a representative sample of the clients of primary distance education. First, the sample was small. Second, the method of recruiting them and the constraints described earlier meant that it was impossible to cross-reference them with a demographic index of the population of primary distance education. However, in the opinions of the principals of the respective schools of the air, the families nominated were a representative cross-section of the families enrolled in their schools. They certainly differed in several important respects.

2.5.2 The predominant industry in the regions served by the schools is grazing: sheep in Charleville and Kalgoorlie-Meekatharra, and cattle in Katherine. It follows that the breadwinners of most of the families were engaged in the pastoral industry as station owners, station managers or station hands. Others included a policeman located in a remote settlement, the proprietor of a caravan park, and a family working an alluvial mining tenement. In terms of their occupational characteristics, they might be allotted to several levels of an hierarchy of socio-economic status.

2.5.3 The previous education of the parents ranged from a father who had left school when he was fourteen and in grade 3, another who claimed he had run away from home as a child to join a circus where he eventually became a lion tamer, to mothers who had professional

qualifications for nursing, teaching or other occupations. Previous education of parents is summarised in Table 2. In the main, the mothers had more formal education than the fathers; all had some secondary education and most had completed ten years of compulsory schooling. One third of them had post-secondary education. Six fathers, on the other hand, had no formal secondary education. While an equal number of parents of both sexes had progressed beyond compulsory secondary education, only three fathers had any tertiary education. Four had post-school technical education in agricultural or pastoral occupational studies.

TABLE 2: HIGHEST LEVEL OF EDUCATION COMPLETED BY PARENTS

		Fathers	Mothers
Primary	1 - 4	1	
	5 - 7	5	
Secondary	8 - 10	10	15
	11 - 12	17	10
Tertiary		3	11
		36	36

2.5.4 All of the families were permanently resident and, with the exception of one which occupied a caravan, they lived in permanent dwellings. Of course such things as the size and type of construction and facilities in the homes varied. They included a large and well-appointed homestead with a main dwelling, guesthouse and workers' quarters set in carefully maintained gardens; a semi-permanent 'settler's dwelling' which had served as the family home for many years; and a station homestead which had been built in an earlier and more prosperous era, and modified progressively as fortunes and family needs changed. Clearly the homes reflected such things as the amount of capital which could be invested in non-productive assets, the profitability of the family enterprises and the disposable family incomes, occupational status and personal values afforded material possessions. In many respects these things were unimportant to the quality of family life. The facilities available in the homes had important bearings upon the ways in which school lessons were managed, however. This will be explored in more detail in the next chapter.

TABLE 3: THE NUMBER OF PUPILS AND FAMILIES EMPLOYING A GOVERNESS

Number of SOA pupils in Family	Number of Families in that category	Number of Families in category with a Governess
1	11	
2	11	3
3	10	5
4	2	1
5	1	
	35	9

NOTE: One family whose children were away at school at the time of the research previously employed a governess to teach two children.

2.5.5 The characteristics of the thirty-six families who engaged in this research project are presented diagramatically in Appendix B and summarised in Table 3. Between them they had 113 offspring whose ages ranged from twenty-nine years to two-and-a-half months. Sixty-eight of them were children enrolled in primary distance education (see Table 1 p.8). Ten of the families employed a governess, female, who lived in the family home. In short, apart from the geographic isolation of their homes, the families were as diverse as any sample of thirty-six which might be randomly selected from the population of Australia.

2.5.6 Perhaps the most important common factor shared by them is that they live in sparsely populated regions in south central Queensland, central Western Australia and the northern half of the Northern Territory. The distances they lived from the schools of the air is summarised in Table 4. Some of them are hundreds of kilometres from the nearest town, and they might live up to a hundred kilometres from their nearest neighbours. They are families who must rely on two-way radio for communication. Road transport means long journeys over dusty and unsealed roads which, in the wet season, can be cut by run-off from rains for several weeks or even months. At those times the families virtually are marooned on their properties. But what does such isolation mean in an educational context?

TABLE 4: DISTANCES OF FAMILIES FROM SCHOOLS OF THE AIR

Distance from School of The Air	Number of Families
>450km	4
350 - 449	4
250 - 349	10
150 - 249	12
< 150km	6
TOTAL	36

2.5.7 For these families having a child reach school age means deciding between boarding school, or an equivalent, and distance education at home. For the majority the decision is to send their children away for their secondary education. This is reflected in Appendix B, where children over the age of 11 are shown as living away from home. During the primary school years the choice usually is education at home. For many families that means providing something as close as possible to an 'urban' classroom. In this study twenty-five of the thirty-six families tried to establish a schoolroom in their homes. The extent to which the process of learning mirrored the urban model will be evaluated in the succeeding chapters.

CHAPTER 3: MANAGING PEOPLE, PLACE AND TIME

3.1 A SCHOOL IN THE HOME

3.1.1 The need for a working routine and a regular place of learning is impressed upon those involved in primary distance education. The following excerpts from school handbooks and Figure 1 illustrate the expectations which are fostered:

> Establish firm lesson times (as in school) and follow those times consistently. Unavoidable circumstances will mean that changes must be made, but try to minimise them.
>
> A bright, cheery school room tends to engender bright, cheery work. Use a regular art/craft period to produce display materials that can make the room a much happier place in which to work.
>
> (School of the Air, Katherine Parents' Handbook. 1st Edition 11/82, pp.22-23)

> It is a good idea for the supervisor to establish a routine and keep to it. Sometimes there will be unexpected disruptions and the timetable would have to be altered accordingly. Most children find a certain amount of security within routine.
>
> Subjects such as maths, reading and spelling should be completed in the morning as they require a certain amount of concentration. Subjects such as craft can then be undertaken later in the day.
>
> The routine should be flexible enough to allow for the interest of the pupil in a particular area as the supervisor thinks fit.
>
> Children are learning all the time. Although convenient in some circumstances to set aside an area exclusively for 'school' work, remember that many opportunities exist for the lessons to be done in a variety of interesting situations.
>
> (Distance Education Centre, Education Department of Western Australia, A Guide to the Supervisor. p.7.)

3.1.2 These suggestions represent the ideal conditions for home learning and must be regarded as sound advice for the management of lessons. The evidence accumulated in this study suggests that it is not always possible in teaching and learning at home, however. In a model classroom, time and space are ordered. Desks, blackboards, pin-up

FIGURE 1: ADVICE TO HOME TUTORS

SOURCE: Distance Education Centre, Education Department of Western Australia. A Guide for the Supervisor.

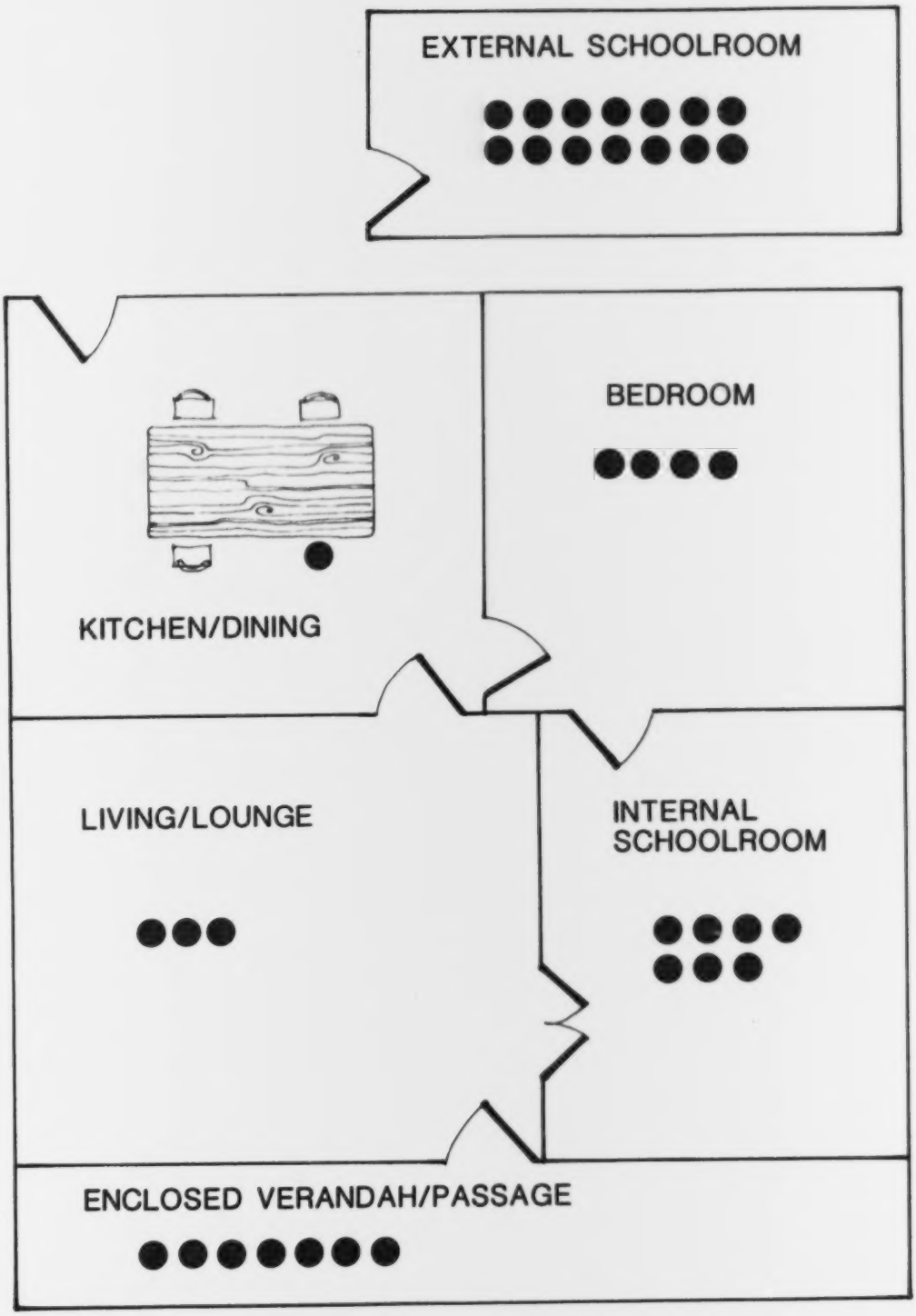
boards, bookshelves, cupboard space, even pupils and teachers, occupy approved places. During the working day time is divided into regulated segments and teachers and pupils are disciplined by them. That model is not quite the same as the spaces which are 'school' for many of the children observed here. In most cases attempts were made to emulate the model ('as in school') but half a shed shared with machinery, even if it does include a teacher, blackboard and desks, is not quite the same. It is even less so when it is situated near the station store and post office and the excitement of store and mail days permeates the schoolroom. Even two rooms of a former railway station, transported from its original site, is far removed from the stereotype.

3.1.3 The places where teaching and learning happens in the homes of this study are shown in Figure 2. Of the thirty-six families, twenty-one maintained a separate 'schoolroom', either within the main dwelling or in another building at varying distances removed from the homestead. Seven families set aside spaces on verandahs. Sometimes they were partitioned, sometimes they were not. Frequently the verandah served as a sitting area or provided access to other rooms in the house. One family worked in a well-organised caravan annexe. It doubled as a sitting area, but it was a pleasant place for schoolwork. Another family used portable room-dividers to section off part of their living room as a study area. That arrangement was less effective because of the proximity of the radio telephone and the frequency of interruptions caused by incoming calls. Yet another family utilised the shearers' quarters as a schoolroom. They had to be evacuated during shearing, but at that time school came to a halt anyway because of the competing demands that the mother-tutor had to attend to. Should the shearing be interrupted by bad weather, schooling might be disrupted for up to six weeks instead of the usual two or three.

3.1.4 Perhaps the most difficult situation is that where there is not a spare room or space in the house or its surrounds. This was the case where five children of one family worked at the kitchen table. A situation like this might be imagined to deteriorate into chaos, especially at mealtimes. Here, however, there was an accustomed order. The mother described how they coped. In answer to the question, 'How do the children cope with radio lessons with other kids around them?' she replied:

FIGURE 2: THE LOCATION OF LEARNING SPACE IN THE HOME

● = one family



'We're fortunate because the kids have never had anything else. They've never known anything else and they have learnt that they have to give that time to the person 'on the air'. We don't have an ideal set-up. We're divided by a flyscreen wall and therefore the sound is there. They have learnt that the one who's on air must have quiet and they've all pretty well respected that.

There are times when I'll be called away and it's like any class. There'll be chaos and the kids on air will be lying on the floor having a good camp and the teacher's saying, 'A...., A...., I'm talking to you. Are you there A....?'.

At another point she described how she managed her own time:

'I learnt to prioritize. Previously I became quite hung up about housework, but I learnt to handle it because the kids are first priority. It's just too bad if the dishes aren't done by 8.00am... it's too bad if the washing's not done. I manage to get it done... School comes first, even to the extent where if people come in, government people and so on, and they want a cup of coffee, they're most welcome as long as they get me one too...

There are times when you have no hope. There are times when I've written off whole days, when an interruption has broken into a train of thought. Lessons on air sometimes cut into concentration at particular times'.

3.1.5 Of course that family was unique, but so too were others. Each adapted the conventions of schooling to their own circumstances. Some coped more effectively than others, but the differences highlighted the importance of how time and space are organised. For these families 'school' was not merely a place; it also was time. These things together made up the context of school in the home.

3.2 FOUR CONTEXTS OF SCHOOLING

3.2.1 Within the variety of circumstances which were presented to the researchers, it was possible to identify four distinct situations of teaching and learning. They are relatively discrete from one another in that they represent four different models of how people, place and time are organised. Very broadly they are distinguished in terms of the extent to which the learning situation is separated from other aspects of station life, is free from interruptions, and has tutor support.

3.2.2 The first can be described as the 'urban' classroom context in which the teaching and learning environment approximates what might be

found in a conventional school. The most significant difference is that it lacks a group of peers. Usually a special schoolroom is established apart from the homestead. The distance of separation varies. In one instance the children rode bicycles to and from school each day, rather like their urban peers; in others the schoolroom was just across the yard. The point is that an attempt was made to provide a room which was relatively free from interruptions such as telephone calls, visitors, or other unexpected disruptions of the routine. This means that the urban classroom context is characterised by a high level of commitment to the child's distance education program and by a low level of competition from other domestic demands. School hours are regular and the home tutor, either the mother or a governess, is present at all times.

3.2.3 There were twelve families in this category. Of these, four in Western Australia and three in the Northern Territory employed a governess (that is, seven out of the ten governesses encountered in this project worked in an urban classroom context). This meant that interruptions to the routine were minimal. For the other five, strategies for preventing interruptions had been devised, but the home tutors had to organise their other duties around the school day.

3.2.4 The second context can be described as a 'modified urban classroom'. In these cases the schoolroom is part of the house and as such is subject to more intrusion of competing demands of the domestic routine, such as visitors and telephone calls. In most of the cases observed here the schoolroom was part of a verandah or the living room or a similar space set aside within the house. Usually it was as far away as possible from the kitchen which is the focus of most household activity. Like the urban classroom context described above, it is characterised by high levels of commitment to the school program and by the almost constant presence of a home tutor.

3.2.5 Of the thirteen families in this category three employed governesses (one in Queensland and two in the Northern Territory). Five mother-tutors organised free time so that they could spend all of the school day with the children (two employed domestic help, another had an older daughter who looked after the home duties, one did not assist with station work, and the other gave low priority to her house-work). The remaining five coped with varying amounts of interruption.

3.2.6 A third teaching/learning situation can be described as an 'integrated context' in which the schoolroom again is situated in the main dwelling, but the school program is integrated with the total life

and work of the family, whether it be a pastoral station, a mining venture, or a caravan park. This situation is characterised by considerable potential for disruption, daily and seasonally. Busy work periods such as drafting, shearing and mustering or the peak tourist season are accompanied by demands not only on the home tutor's time, but also the time of the children. School timetables are adjusted to accommodate them. Sometimes the year's teaching program is extended, for example by commencing school two or three weeks ahead of schedule to allow for the time which will be lost during shearing. In other cases the children do schoolwork at weekends to make up for time lost.

3.2.7 The integrated context is characterised by a higher level of competition of other demands over the regular school program than in the other two learning contexts described above. However it may be supported by a full-time governess or a home tutor as in other contexts. Of the eight families in this category observed here, none employed a governess. In three of them the family coped admirably. The learning environment was equal to the best of the other contexts. The other five were troubled by health problems (two of the mother-tutors suffered debilitating illnesses), lack of space and facilities (the family of a station hand who lived in a worker's cottage), involvement in general station work as well as home-making and tutoring the children, and problems arising from the educational backgrounds of home tutors. Similar difficulties were observed among other families, but the consequences for the ways families coped with their children's education were most serious in the integrated context. Unfortunately they are not uncommon. They manifest themselves in many ways and they can impede the effectiveness of school learning conducted at home.

3.2.8 A fourth context of schooling at home may be described as the 'the solitary learner context'. This is exemplified by a wide range of other demands on the family's time. These compete strongly with the school program to the extent that the parents' other duties tend to isolate the children from immediate and continuing support in their daily lessons. The situation is one where the child receives such support if, and when, the parents are available. For most of the time the child works alone.

3.2.9 In this study three families had a child who worked in a solitary context. Their circumstances were quite different. In one both parents worked full-time six days a week to maintain production in the family enterprise; in another the mother was fully extended in supervising the

lessons of three younger children and an older child was left to her own resources in a separate part of the house; in the third, the mother was engaged in outside activities and an eleven-year-old coped with her own schooling, as well as occasionally tending her pre-school brother and sister.

3.2.10 These four contexts of schooling, taken as a whole, comprise a loosely constructed continuum. At one end is the urban classroom context where few demands compete with the school program. At the other is the solitary learner where competing demands direct that the level of tutorial support available to the child is minimal. Of course there is some overlap in the four categories. The situations observed were diverse and differed widely in their physical locations, in the types of learning activities, the financial resources available to the families, the educational levels of parents, the availability of other support such as a governess or domestic help, and so on. Even so the four categories were surprisingly robust in terms of being able to classify the heterogeneity contained in the contexts identified and are a useful basis for providing some order to this diversity.

3.2.11 The extent to which one or other situation prevails is determined by a number of factors. These include the nature of the occupation in which the family is engaged, their financial resources and educational background, and their personal values and interests. No one of these factors alone was sufficient to define the likelihood of any of the contexts of schooling. For example, the situation with a complex array of demands which had the potential for competing with the school program in some cases was offset by the resources available to the family to employ a governess for the children. In others, where there were similar competing demands, other family circumstances prohibited employing an assistant and mothers coped by arranging their lives around the education of their children.

3.3 MANAGING TIME

3.3.1 Whatever the learning context there are three aspects of time to be managed. These are the program of learning over a whole year, the weekly or fortnightly schedule for completion and return of sets of lessons to the distance education teachers, and the management of the school day. The last is most important to the aims of this study since the focus is how the child copes with learning at home. However the other two are of interest since they help to explain the sorts of pressures which have to be accommodated in the daily routine.

3.3.2 Passing reference has been made to the various strategies which are employed to prepare for or make up for planned or unexpected interruptions of the annual program. Some of them relate to non-school activities. For example, seasonal tasks such as shearing mean that there has to be flexibility in the program. Where a mother is the home tutor shearing often presents a major intrusion into the amount of time she can devote to her children's schoolwork. At other times the program might be interrupted by activities organised by the schools themselves. Such things as school camps, home tutor seminars, mini-schools and 'musters' are organised on a regular basis. Generally they are regarded as essential compensation for the social experiences isolated children miss. They can mean that a week or more is lost in the progression of correspondence lessons, however, and that time has to be made up.

3.3.3 Correspondence lessons are organised in 'papers' or 'sets' which pupils are required to return to their schools at regular intervals. In Queensland each year level has thirty-six sequential lesson papers requiring weekly correspondence between the pupil and the Primary Correspondence School teacher. In Western Australia each set of lessons contains sufficient work for ten school days. Pupils are required to complete at least eighteen sets in the forty-week school year and correspondence between the home and the school of the air is expected once a fortnight. In the Northern Territory nine sets are required to be completed each semester. Worked sets are returned to the school of the air once every two weeks. Within the home the lesson programs are planned around the schedule of Australia Post's deliveries to stations. Missing the post can mean, in good weather, a delay of a week or a fortnight in despatching lesson materials.

3.3.4 As might be expected, home tutors reported pressure upon themselves and their pupils to meet the regular deadlines. Despite assurances from the schools that children should be allowed to proceed at their own pace, the home tutors are anxious that their children complete all work by the due date. This will be discussed further in another part of this report. Here it is sufficient to note that maintaining the schedule means that families accept that they must do extra hours of schoolwork each day or work at weekends if their routine is interrupted.

3.3.5 All of the families in this study indicated that they try to work regular hours each day, although several indicated that they did not follow a set timetable of lessons. The only inflexible time is the air

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FIGURE 3: AIR LESSON TIMETABLES - KALGOORLIE AND CHARLEVILLE SCHOOLS OF THE AIR

CHARLEVILLE SCHOOL OF THE AIR - 1984 CLASS TIMETABLE

TIME	6945 (ST.4)	5227 (ST. 5)	4045 (ST.1)	6845 (ST.3)	4980 (ST.2)
8.15					
8.20	NOTICES - NOELINE	NOTICES - ANNE MAREE	NOTICES - KATHY		
8.30	1A NOELINE	2D ANNE MAREE	1F KATHY		
9.00	1B NOELINE	1D KATHY	3G KIM		
9.30	2A JULIE	2E ANNE MAREE	3H PATSY		
10.00	2B HELEN	3D PATSY	2G JULIE	NOTICES 2C ANNE MAREE	NOTICES 3F KIM
10.30	3A PATSY	3E MARIANNE	2H HELEN	3C KIM	1E KATHY
11.00	3B MARIANNE	5F ALEX	4F KATHY	1C NOELINE	2F ANNE MAREE
11.30	4A KATHY	4D NOELINE	7E KIM		
12.00	4B NOELINE	7C PATSY	6F ALEX		
12.30	5A JULIE	6D ALEX	5H MARIANNE		
1.00	5B JULIE	SPECIAL LESSONS	5I MARIANNE		
1.30	5C JULIE	5E MARIANNE	SPECIAL LESSONS	4C NOELINE	4E KATHY
2.00	7A KIM	DISCUSSION TIME	DISCUSSION TIME	6C ANNE MAREE	6E ALEX
2.30	6A ANNE MAREE	CLUB →	→CLUB	5D JULIE	5G MARIANNE
3.00	6B ALEX	CLUB →	→CLUB	7B KIM	7D PATSY
3.30	CLUB →	CLUB →	→CLUB		

AIR LESSON TIMETABLE - KALGOORLIE SCHOOL OF THE AIR - 1984

TIME	YEAR	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8.00	3	CREATIVE WRITING/ MATHS	READING/ SOCIAL STUDIES	MUSIC FORTNIGHTLY 4/5 READING	SOCIAL STUDIES/ SCIENCE	LITERATURE/ DRAMA
8.30	1 (1)	LANGUAGE/MATHS	SCIENCE/READING	MATHS/PRINTING	SOCIAL STUDIES/ READING	LITERATURE/ DRAMA - ALL YR 1
9.00	R.F.D.S.					
9.30	WHOLE SCHOOL	PHYS.ED MATHS	PHYS.ED MATHS	PHYS.ED:MUSIC YR 1 MATHS :FORTNIGHTLY	PHYS.ED MATHS	PHYS.ED MATHS
10.00	1 (2)	LANGUAGE/MATHS	SCIENCE/READING	MATHS/PRINTING	SOCIAL STUDIES/ READING	SCHOOL ASSEMBLY GOULD LEAGUE
10.30	2 (1)	CREATIVE WRITING/ MATHS	READING/ SCIENCE	MUSIC/ SOCIAL STUDIES	SOCIAL STUDIES READING	BUSY BEE
11.00	R.F.D.S.					
11.30		PRE-PRIMARY	PRE-PRIMARY	MUSIC FORTNIGHTLY 22/3	MUSIC FORTNIGHTLY PRE-PRIMARY	FREE AIR TIME
12.00	5	READING/WRITING	SOCIAL STUDIES	SCIENCE	READING/MATHS	LIT/DRAMA/ART YEARS 4/5
12.30	2 (2)	CREATIVE WRITING/ MATHS	READING/ SCIENCE	MUSIC/ SOCIAL STUDIES	SOCIAL STUDIES/ READING	LIT/DRAMA ALL YEAR 2
1.00	R.F.D.S.					
1.30	6	WRITING/SCIENCE	READING	MUSIC FORTNIGHTLY 6/7 MATHS	SOCIAL STUDIES	LITERATURE/ SONGS/DRAMA YEARS 6/7
2.00	7	READING	ENGLISH	MATHS	SOCIAL STUDIES	PARENTS' AND SUPERVISORS' MEETING
2.30	4	MATHS/SCIENCE	SOCIAL STUDIES	WRITING	READING	P. & C. MEETING
3.00 3.30						

lesson. That is dictated by the school's schedule and punctuality is essential. The air lesson timetables of Kalgoorlie and Charleville schools of the air are presented in Figure 3. They are obviously very full programs. They cannot be altered, but in all other aspects of their daily lessons most families find it difficult to adhere to a regular schedule.

3.3.6 The notional hours of schoolwork each day for each family, as reported in interviews, is represented in Appendix C. These may vary slightly, with earlier starting and finishing times during the hot months, but the general pattern is to start work at 8.00am or 8.30am, stop for 'smoko' (the universal name given to morning recess) at 10.00, lunch for an hour after 12.00 or 12.30, and finish school at 3.00 or 3.30pm. In short, a regular school day of six hours of lessons is attempted. Only three families did not stop for morning 'smoko' and four families did not have a planned routine of schoolwork in the afternoons. One family worked up to seven hours each weekday between 7.30am and 3.30pm and from 7.30am to noon on Saturdays. They employed a governess and there were few interruptions in the six-day routine.

3.3.7 The reasons for establishing a routine were simple. First, the schools encouraged it, as instanced in the excerpts presented at the beginning of this chapter. Within the homes it was directly related to the amount of work to be completed and the home tutors' concern to maintain productivity. The following extracts from interviews with two mothers illustrate opinions which were expressed by nearly all home tutors. The first, whose child worked to a notional time table from 8.30am to 2.45pm, explained:

> 'If you don't have a time table, you don't get the work done. You've got to do maths, English, reading, tables, spelling every day, as well as diary and little things. One day it's English first and next day it's maths. She has an hour in which to do it, usually two sessions a day.'

The other mother operated on a more flexible schedule, but identified a similar pressure of work.

> 'We don't have a strict timetable in that I don't stick to spelling first, then maths and whatever, but we stick to regular times. We start at 8.00 in the morning for most part of the year, but as it gets hotter we might be starting at 6.00 and finishing at lunch time. There's a definite 8.00 to 3.00 with twenty minutes for smoko in the morning and an hour for lunch. I have to stagger the actual lessons, having multiple classes.'

When asked, 'What's the pressure on you?', the same mother replied:

> 'There's continuous pressure to get it done. There's a continuous demand that work be done. I've only come across it recently. Earlier in the piece if maths were behind and so on, you'd set them to work, there's no question about that. Suddenly it seems to be that you have to have all subjects completed. The pressure's on at the school. To me the pressure to the home supervisor or the mother is this push for excellence all the time. The child suffers because the pressure's on the mother and really it's a bit of a farce.'

3.3.8 In spite of those pressures, competing demands from other non-school activities mean that the school day has to be flexible to accommodate them. There was marked disparity between the notional time tables presented in interviews and the daily records of time on school tasks presented in the diaries. Reasons offered for late starts or early finishes included, 'a late night - definitely a late start next morning'; 'mail arrived'; 'visited town for shopping and medical reasons - cancelled school for the day'; 'all hands needed on the property - mustering and loading for market'; 'sickness'; and 'visitors!'.

3.3.9 The four contexts of schooling presented earlier offered different opportunites for regularising the daily program of lessons. The examples which follow at the end of this chapter illustrate the variety which was observed (see Figures 4-7, pp.32-38) In all of them the key role of the home tutor is demonstrated. It is she who ensures that lessons proceed according to plan. The evidence of the incomplete work of the child in the solitary learner context is an exemplar of the importance of supervision.

3.3.10 In the urban classroom context the diary of lessons followed closely the notional time table which had been presented earlier in interview (see Figure 4). The governess was in attendance for the duration of the school day and each lesson followed a pattern of tutor instruction, supervised practice and consolidation through further practice. Because there were two pupils, the home tutor alternated her time between them so that while she worked with one, the other worked alone on a set task. The technique is a familiar one for multi-level classroom management.

3.3.11 In the modified urban classroom context, the start of formal lessons was delayed until after the mother was free from business with a visiting stock and station agent (see Figure 5). In the meantime the pupil worked on self-directed activities. To make up for the time lost

the regular noon-hour lunch break was delayed until after the school-of-the-air lesson was completed at 1.30pm. The events of the day illustrate the mother's comment in interview that, 'Of course, it doesn't always happen', meaning that very few days were free of interruption, and maintaining a regular time-table of lessons was nearly impossible.

3.3.12 The differences between the functions of a governess and mother-tutor are exemplified here. Where there was a governess employed there were fewer interruptions to the school program. As a general rule, they are not required to undertake a great deal of other work and they devote more time outside of school hours to preparing lessons. Of course, there were exceptions. There were no formal contracts of employment for the ten governesses observed in this study. Only one family had a written duty statement and, for the others, duties outside the schoolroom depended upon particular circumstances. Even so, governesses were primarily responsible for supervising the children's lessons.

3.3.13 In the integrated context (Figure 6) the notional timetable is constantly interrupted because the learning program has to compete with other demands on family time and attention. For the 'solitary learner' (Figure 7) the problem is not so much one of external interruptions to the notional timetable as one of lack of supervision. The evidence presented in the daily diary of lessons reaffirms the importance of the home tutor's role to ensure that the child completes set tasks and proceeds according to the program laid down in the correspondence papers.

3.4 COMMENTARY

3.4.1 The preceding analysis indicates that primary distance learning can mean many different things in terms of its physical context, the amount of home tutor support available, and the way time is managed. It may mean a firm schedule of lessons in a 'bright cheery classroom' with the undivided attention and support of a home tutor; or it may mean working in comparative isolation in a makeshift study area with little guidance or support. In summary, the exact nature of primary distance learning depends on a complex array of factors beyond the control of the child, the most significant of which are the characteristics of its family and the nature of their particular enterprise. Account can be taken of these contextual differences when reacting to and 'marking' children's efforts. However, to account for these differences in the

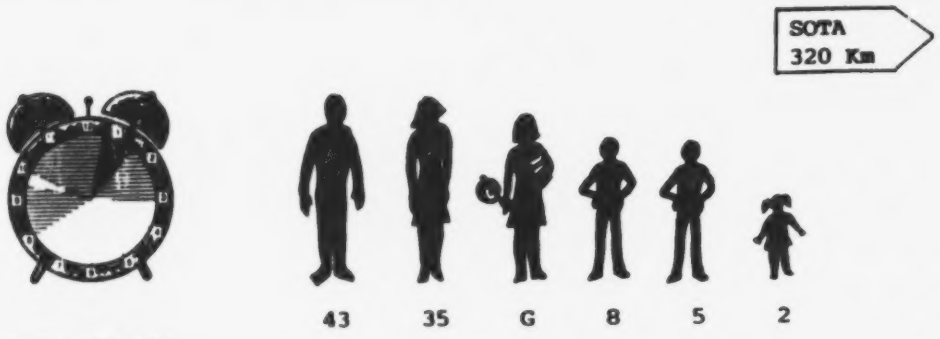
learning materials presented to children is an even more difficult task, but one which still needs to be addressed. Although the same need applies for children attending 'regular' schools, they at least have daily face-to-face contact with teachers who can attempt to address the issue of individual differences by discrepancy learning materials, and by giving special help where it is needed. This study suggests that not all distance learners receive that kind of support.

3.4.2 The analysis also reveals the crucial nature of the home tutor's role. Apart from school-of-the-air broadcast times, the effective scheduling, organisation and structuring of the learning program is very much in the hands of adults; as is the clarification of instructions, extension of ideas and the checking of work. Given the importance of these adult roles, primary children who are deprived of them by particular family or environmental circumstances are much less favourably placed than are those who have had access to such support.

3.4.3 Finally, this analysis reveals a disjunction between the expectations of distance education generally and the extent to which they can be met. Implicit in the expectations are the assumptions that a conventional classroom model will be reproduced in the isolated learning context, that skilled support will be available through a home tutor, and that the curriculum can be scheduled into a firm routine. Most families strive to meet those expectations. This is not simply because they are emphasised in distance teaching materials, but also because most parents bring with them conceptions of classrooms which relate back to their own primary school experience. They are therefore working within the framework of their own experience and of that presented to them by the designers of distance curricula. The stress which some families experience in attempting to meet these expectations derives from the fact that the expectations are often incompatible with the realities of the situations in which they are expected to implement them. This is because not all families have the learning space which is free from outside interference. Also they are expected to perform a teaching role which incorporates skills which are themselves imperfectly understood and which are largely undefined in the context of distance learning. Even where some skills are implied or actually specified by the curriculum materials, many home tutors have had either no training or have had little experience with them. Finally, the unpredictability and seasonal variations of the rural day are at odds with the expectations for the controlled, tight schedule of a regular classroom.

It is therefore not surprising that many families experience great difficulties in attempting to reproduce a learning environment which has characteristics similar to those of schools in provincial or urban settings. The fact that so many families and their children achieve so much is testimony to their ingenuity and their commitment.

FIGURE 4: ROUTINE IN THE URBAN CLASSROOM CONTEXT



THE NOTIONAL TIMETABLE

THE FAMILY

Here the schoolroom was situated some 250 metres from the homestead in a building which contained the governess's quarters and guest rooms. Mother was a trained school teacher who occasionally assisted with lessons but preferred not to because it spoilt her relationship with her children. The governess supervised four children, the two boys of the family who were in year levels 1 and 3 and two children of a station worker who were in Transition year and year 2.

The school day was regulated and few interruptions were permitted:

> 'We try to keep Monday to Friday 8.30 'til 3.30. If there's something going on, the kids just have to miss out on it.'

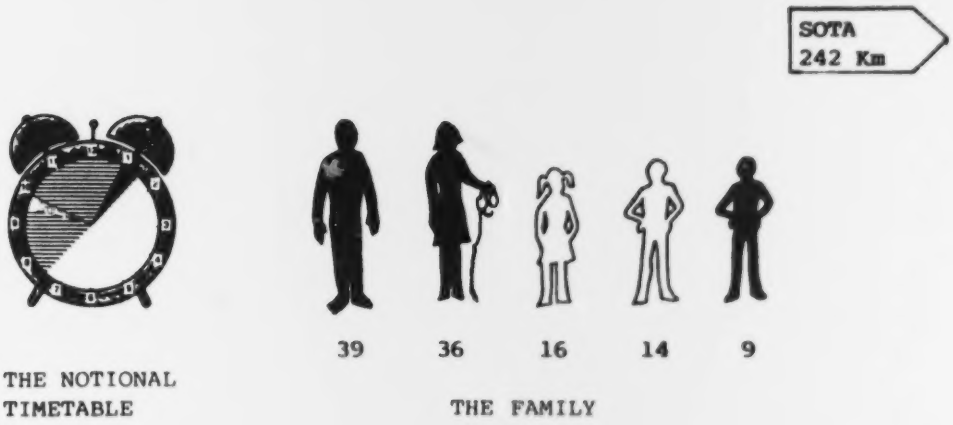
Q. 'Do you have a timetable for each day?'

A. 'I have to, otherwise with four children the work just wouldn't get done. I have one for each child, that's new actually. That's only been in use for the last week and it went really well. I used to keep a folio with the children's names, the times and what to do. On the weekend I used to spend six hours writing it up for each week. Now I've written one for two weeks that will always apply. It's different each day for two weeks and then it goes back to the beginning.'

TUESDAY AUGUST 14 **DAILY DIARY OF LESSONS**

	WHAT HOME TUTOR DID	WHAT PUPIL 'A' DID	WHAT PUPIL 'B' DID
8.30	Spent half-hour making sure equipment is ready for lesson		
9.00	Gave 'A' a test then he worked independently handwriting. 'B' full supervision needed to work on these pages. Listened to reading.	Spelling and handwriting Did a spelling test. Worked on a page from book to practise writing.	Worked on a page practising reading and colouring. Also beginning sounds.
9.30	Told 'A' what page to do. Listened to tables. Helped 'B' with air lesson.	Maths tables. Practice in adding hundreds. x 3, x5.	Air Lesson. Talked about 'food chains'.
10.00	SMOKO	SMOKO	SMOKO
10.30	Showed 'A' what work to do. Helped 'B' with instructions then left him to work alone.	Phonics. Drew pictures and wrote sentences for 'ai' words.	Maths. Made a graph on what type of animals everyone liked.
11.00	Helped 'A' explain the difference between 'to', 'too' and 'two'. Showed 'B' what to do and let him work by himself.	Grammar. Learnt difference between 'to', 'too' and 'two'. then wrote in sentences.	Writing. Practised drawing round circles and and straight lines
11.30	Supervised 'A's air lesson. Showed'B' what to do from language word book.	Air Lesson. Did tables on air.	Language word book Did two pages from word book.
12.00	LUNCH	LUNCH	LUNCH
1.00	Listened to 'A' read then set him a work sheet to do. Showed 'B' how to crayon etch, then let him go.	Reading. Read 5 pages from Reader, then a page from work book.	Art. Made a crayon etch
1.30	Finished bird project with 'A'.	Social and Cultural Education (SACE) Completed project on pelicans and kites.	Social and Cultural Education Went on an excursion to watch 'birds'. Then drew a picture.
2.00	Gave 'A' a sheet of paper and let him go off by himself to write whatever he liked.	Conference Writing. Wrote a story for his folder which I'm not allowed to see.	
2.30	Took whole class on an excursion to watch birds.	SACE Went on an excursion to study birds, then wrote about his chosen bird.	
		HOMEWORK Learnt spelling words for tomorrow's test.	HOMEWORK Read to Mum

FIGURE 5: ROUTINE IN THE MODIFIED URBAN CLASSROOM CONTEXT



Here the verandah is set up as the schoolroom. The two older children are away at boarding school and mother has to cope only with the youngest who is in year 5. Mother has had 11 years experience as a home tutor (as well as five years of correspondence education as a child).

Mother and son help father around the property when needed. The school day is irregular. Time lost is made up at weekends or in the evenings. If it is not possible to catch up, some parts of lessons are left out:

> 'I know what to leave out but a lot of parents don't... I leave out things he knows - but teachers don't always agree with that.'

Q. 'How is the typical school day organised?'

A. 'We start about 7.30 in the summer and go through two full hours. We have a break, another two hours, and then in the afternoon we might do a bit of art or science or social studies if we've got time. If we haven't got time - we've got to go out and help - we've just got to leave them. We do art, science and social studies if we've got time.

When we start in the morning we go through tables and spelling, most times, and then go on to the actual maths paper. We go through the new lesson for the day and, say like today with fractions where we got tired of that, we throw it out and go on to something else. Maybe we come back to that later. Next we do language arts.'

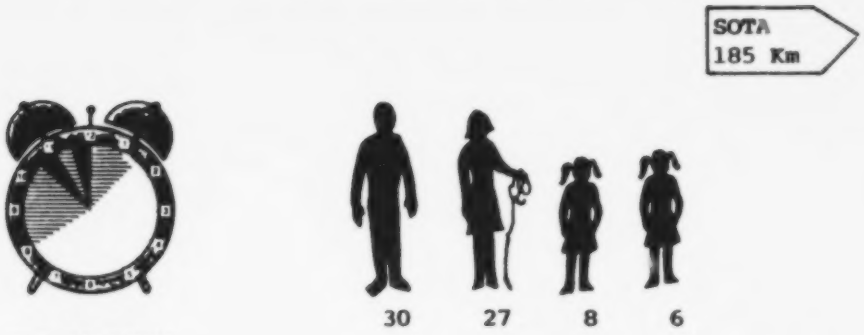
Q. 'Why do you have a time table?'

A. 'Well, it makes it easier every morning, if that's what's to come up. Quite often if I'm washing up, I can just send 'A' up. I've already written spellings out. If I'm busy he can just come up and write his spellings out three times and learn them. He knows what he's got to do when he's sent up here and I'm busy. Of course, that doesn't always happen. Some mornings at half-past-seven we're down at the sheepyards.'

TUESDAY JULY 17 DAILY DIARY OF LESSONS

	WHAT HOME TUTOR DID	WHAT PUPIL DID
9.00	Watered garden. Visitors arrived (stock and and station agent)	Tables and spelling. 'A' wrote out spelling list and learnt tables.
9.30	SMOKO - prepared for visitors	SMOKO Did some reading in this time also.
10.00	Sent 'A' to work on his own while visitors here.	Social Studies/Maths. Did some work on Social Studies project book. Reading from PCS set book. Did some maths exercises in correspondence paper to be returned.
11.30	Taught word building and did some dictionary work. While 'A' was doing exercise in book cleared up morning tea dishes, etc.	Language Arts. Did Word Building and dictionary work in correspondence exercise book.
12.00	Taught lesson on finding the area of rectangle, square, etc.	Did some exercises set by me as well as supplementary exercises in correspondence paper.
12.30	Read papers and books to 'A' from correspondence paper.	Started drawing a map of Queensland to be returned.
1.00	Supervised air lesson.	Air lesson. Maths.

FIGURE 6: ROUTINE IN THE INTEGRATED SCHOOLROOM CONTEXT



THE NOTIONAL TIMETABLE

THE FAMILY

Here, home is a caravan with a large annexe which serves as the family sitting room and schoolroom. There are a lot of distractions for the children: movement in and around the park; other children not restricted by school routine playing outside; mother called away to prepare food or look after the shop while dad attends to the fuel pumps, and so on.

At times when mother is needed in the shop she takes the children with her and gets them to work there. It is rarely successful because of numerous interruptions. (It should be noted that since the study, mother has written to say she has got a new schoolroom for the girls. It is air-conditioned and they cannot see out at all!)

Q. 'Do you start each day's lessons with particular subjects?'

A. 'Usually maths or reading first because they get through it easier. They can concentrate more at that time in the morning. Come the afternoon it's just a waste of time doing maths or reading. They're too tired by then.

Q. How do you fit in schooling around all the other demands on your time?'

A. 'That's a good question. I just manage to I guess. When I have to give a hand in the shop I either give it a miss for the day or try to take their work down there and fit it in. But if it's busy down there it's a waste of time as well.'

Q. 'If you've lost time like that, how do you make it up?'

A. 'We're supposed to work through the holidays, but you're really ready for a break come the holidays and you don't get anything done. We worked a few holidays. We work the odd Saturday. If we have Friday in town we might do a little bit on Saturday morning. But that's not too often.

TUESDAY AUGUST 21 DAILY DIARY OF LESSONS

	WHAT HOME TUTOR DID	WHAT PUPIL 'A' DID	WHAT PUPIL 'B' DID
	Went down to give a hand at the shop. Very busy so I was caught up there until 9.30am.		
9.30	While 'B' was doing her handwriting it gave me time to organise their next set of work.	Handwriting One page of cursive writing.	Handwriting One page done in her writing book.
9.40	Got 'A' organised for her language set. I'm afraid I was called back down the shop as it was busy. couldn't stay for 'B's' air lesson. Hopefully she listened to her air lesson and 'A' finished off her sentences in her language book.	Language This language set covers handwriting, spelling, creative writing, etc. Using HAS and HAVE in Adding ED and ING to a word. Finished the above work and then went out to play until I returned again at 11.15am.	Maths Correct maths and go over any mistakes. 10.00 Air Lesson Listened to radio lesson then went out to play.
11.15	Just came back after being very busy serving at the shop. Chased around looking for both girls who by now were busy playing with other kids. This has just about put an end to school lessons today. Too many interruptions.	Spelling Tested on words learnt yesterday. 11.20 Language set. Cut out and played with a puzzle.	Rounded back inside to start work again. Read-Played game with flash cards.
11.20	Had a game with 'B' using her flash cards. I'm afraid the girls have lost interest today with so many interruptions.		
11.30	Listened to 'B' read. While 'A' gets on with her written work I'm off inside to clean up. Trying to listen to 'A's' air lesson in case she needs any help.	11.30 Air lesson Practise 3 times table.	11.30 Reading Read from reader 'Digger Helps Out' 3 pages. Written work - complete sentences with words from Reader. Join two words to make one. Learnt three new words for tomorrow.
		12.15 Maths Subtraction. Problems	12.15 Counting Spent more time counting and filling in missing numbers 10 to 50
12.45	LUNCH	LUNCH	LUNCH
	A couple of tourist buses in this afternoon so it's too busy to be able to do a bit of schoolwork.		

FIGURE 7: ROUTINE IN THE SOLITARY LEARNER CONTEXT

THE NOTIONAL TIMETABLE

THE FAMILY

Here the family home is a temporary dwelling since the family enterprise is worked as a lease with a limited expected productive life. Both parents work full time and the child works alone in her bedroom for most of the day. Occasionally the grandparents visit and the pupil seeks help from grandmother.

Q. 'Do you think that 'C's' got any special way of coping with it alone?'

A. 'It's a matter of necessity.'

Q. 'Do you ever say I don't want to do school?.'

PUPIL 'Well there's some subjects in school that I didn't. There's subjects like maths and spelling where I said I didn't want to do that. I'll do the rest of the schooling but I won't do that!'

Q. 'So what happened then?'

A. 'Consequently she missed out areas of schoolwork, and didn't do it in the set and when the set came back to me I picked up that she'd done it so the set was actually a fortnight late because she hadn't done her mathematics.'

Q. 'How did you learn that you must do all the set work?'

PUPIL Actually, I knew myself that I had to do it... with a bit of help from Mum.'

A. 'She had to do it no matter what.'

Q. 'Do you think that you've any special things that you've learnt to make it easier for you to cope alone? You said to me earlier that you don't like a lot of people around you; you enjoy being on your own. Are there many children like you?'

PUPIL 'Well actually, I don't think so. They've had so many people around them that they don't know what it's like being on their own and they think it's going to be terrible.'

Q. 'So you don't need somebody standing looking over your shoulder to get the work done?'

PUPIL 'No, I do not!'

TUESDAY AUGUST 14 DAILY DIARY OF LESSONS

	WHAT HOME TUTOR DID	WHAT PUPIL DID
9.00	I spent approximately 10 minutes hearing 'C's' spelling list.	Spelling.
10.00	The rest of the day spent cooking and other housework.	
10.00		SMOKO
		Spelling exercises very little done.
12.00	Checked on 'C' to find she had done equivalent of three sentences for the whole morning.	Did reading exercise and health for the
	After disciplining she decided she had best	rest that set.
1.30	get in and do some work.	Air Lesson
		Map grids
2.00		Began some science.
4.00	SMOKO	SMOKO
		Normal chores before tea.

CHAPTER 4: LEARNING AND TEACHING AT HOME

4.1 THE DISTANCE TEACHING PROCESS

4.1.1 Two expectations are apparent in the learning materials for primary distance education. The first is that a home tutor will supervise all lessons and at various stages take an active part in the child's learning activities. The second is that over the six or seven years of schooling the child will become increasingly independent. More learning will be carried out through instruction presented in texts and less through interaction between the pupil and the tutor. That progression is illustrated in the instructions presented in learning materials sent to the homes from their respective schools. In the material for year one, the active participation of the home tutor is made explicit in the instructions for every exercise. By the time the child has progressed to year three the home tutor's functions are prescribed less frequently and instructions are addressed to the pupils more directly.

4.1.2 Most children can and do work alone for brief or extended periods. In this study they were observed doing so at some time in every day; there was concentrated engagement with planned learning activities. At those times the home tutors appeared to be outside of or, at the most, incidental to the process of learning. However, working alone is not necessarily the same as learning independently. For example, a child may have been working alone, but seldom reached such an independent engagement without first exploring the subject or object of the lesson with his or her home tutor.

4.1.3 This raises a separate issue which was not tested in this study. Even though the children were observed to be working alone, there remains a question about whether they were working effectively. This report might speculate about that on the basis of observations of the children's level of application to their studies. Obviously that varied. Their apparent concentration spans ranged from a few minutes in many situations to an hour in at least one case. However, such observations are not reliable evidence of the effectiveness or otherwise of their learning. That might be the worthwhile subject of a separate study. It has implications for conventional school learning as well as for distance education. Here it can be posed as another possible element of disjunction between the expectations of distance education and the actuality of teaching and learning at home.

4.1.4 Apart from the availability of the home tutor, the most obvious factors which influenced the amounts of time children spent working alone were their ages and levels of schooling. Children in year one worked almost constantly with their home tutors; those in years six and seven spent a greater proportion of their time on self-regulated activities. Only three children in this study worked alone at all times. They were the three who were categorised earlier as 'solitary' learners. Most of the others worked unattended for only a small part of the day. Usually when they were working 'alone', the home tutor was close by to keep an eye on their progress.

4.1.5 The relative proportions of time that the children spent working alone or unattended are summarised in Tables 5 and 6. Those data indicate that 9 in 10 occasionally worked unattended, and the same proportion worked with only incidental supervision for at least some of the time. For most of the time, however, the home tutor was present in the schoolroom. This prompts the question about what functions the home tutor performs in distance teaching. What does she do? What does the pupil do? How do they interact in the schoolroom?

4.2 PARTICIPATION IN LESSONS BY PUPILS AND THEIR HOME TUTORS

4.2.1 Despite the evidence that the children might work alone for up to half of the school day, or even longer in some instances, it was observed in the previous chapter that there is a strong dependence upon home tutors to organise the schoolrooms and to regulate the daily and weekly (or fortnightly) programs of lessons. Observing what happened in classrooms revealed that in most cases the children also depended upon their home tutors to interpret instructions presented in their distance education papers or sets, to confirm that they were following instructions correctly at successive stages in the lesson, to answer their questions and resolve their problems, uncertainties or confusions, and to check their work for neatness and accuracy after it was completed. In addition, the pupils looked to their home tutors for praise and encouragement, and expected to be disciplined by them when they misbehaved. Frequently, it was the home tutor who provided the motivation for the lessons observed here and it was she who ensured that the children persisted with their set tasks. In short, the home tutor mediated between the child, the distance education curriculum materials, and the distance education teacher. A governess compared her role with that of the distance teacher in these emphatic terms:

TABLE 5: FREQUENCY OF RESPONSES TO THE QUESTION 'HOW OFTEN DOES THE CHILD WORK UNATTENDED?'

	CONTEXT OF SCHOOLING				ALL FAMILIES
	URBAN	MODIFIED URBAN	INTEGRATED	SOLITARY	
ALL OF TIME	0	0	0	2	2
MOST OF TIME	1	0	0	0	1
SOME OF TIME	8	5	4	0	17
RARELY	3	7	4	0	14
NEVER	0	2	0	0	2
	12	14	8	2	36

TABLE 6: FREQUENCY OF RESPONSES TO THE QUESTION: 'HOW OFTEN DOES THE CHILD WORK ALONE BUT SUPERVISED?'

	CONTEXT OF SCHOOLING				ALL FAMILIES
	URBAN	MODIFIED URBAN	INTEGRATED	SOLITARY	
ALL OF TIME	0	0	0	0	0
MOST OF TIME	1	4	3	0	8
SOME OF TIME	8	8	4	0	20
RARELY	3	1	1	0	5
NEVER	0	1[(a)]	0	2[(b)]	3
	12	14	8	2	36

NOTE: (a) Here the home tutor indicated that she worked with the child constantly.

(b) Here the home tutor indicated that the child always worked alone and the supervison consisted of checking that the set work had been completed on time.

> 'I'm here all the time. I'm the one who goes through their work. I'm the one who sorts out any problems with them. If they can't do something, I'm the one who sits there and goes through it over and over again until they can understand it.'

4.2.2 There was interaction of one kind or another between the home tutor and the pupil at several stages of every lesson. This was so in three of the contexts of schooling represented earlier as the urban classroom, the modified urban classroom, and the integrated contexts. The exceptions, of course, were the three children who were operating in a solitary learner context. The three examples which follow this chapter illustrate the nature of the interaction and the way in which it varies according to the ages and levels of schooling of the pupils, and other factors particular to the family circumstances (see Figures 8-10, pp.54-58). They were chosen because they illustrate the similarity of some aspects of classroom behaviour observed in all three contexts, as well as the flexibility which has to be introduced in some of them because of unavoidable interruptions to the schoolroom routine.

4.2.3 The governess in the example of the urban classroom context described quite succinctly how the child in year one relied upon her for the four hours of each day that they were together in the schoolroom (see Figure 8). Their lessons progressed as successions of questions and answers, 'say and do' with the governess in control most of the time. She interpreted the objectives of the lessons and through directed questions and activities guided her pupil through the learning experiences.

4.2.4 That might be contrasted with the work habits of the two older children of the same family. In some respects they were atypical because of their high aptitudes for learning and the deliberate program to foster their independent work habits which had been followed for three or four years previously. However, similar routines of schoolwork might be discerned in the examples of the urban classroom and the integrated classroom contexts cited at the end of the chapter (see Figures 9 and 10). The researcher's comment in the Lesson Observation, 'one-to-one situation virtually - time divided between children,' might have been written for all three examples. This strategy whereby the home tutor interacts with children on a rotating basis was a common means of coping with the children's competing demands for attention. Thus, although the physical contexts of schooling varied, the patterns of interaction between home tutors and their students were similar across all contexts.

4.2.5 The stage at which the children are recognisably less reliant upon their home tutors varies. Parents and governesses were asked, 'At what age have your children become less dependent on you for help with their schoolwork?' Some were unable to answer because they were new to distance education. Either they had no previous experience or their eldest child was in the first year of schooling and they knew only the sort of reliance described above. The consensus among the more experienced home tutors was year 3, or year 4 in some circumstances. This accords with what is known about the development of higher-order reading comprehension skills among primary school children. At years 3 or 4, they normally have acquired interpretive and applicative reading skills. Teachers expect their pupils to function fairly autonomously in tasks which require them to respond to written instructions, provided that they are couched in appropriate language and are of an appropriate level of simplicity.

4.2.6 Even though by age nine children normally can manage these limited aspects of their own schoolwork the attendance of the home tutor in the schoolroom continues to be required throughout the primary school years, just as a teacher is usually present in the conventional classroom. It was observed, for example, that frequently they sat with the children to assist with air lessons, and even where help was not needed, home tutors tried to be in close proximity so that they could 'keep an ear' to the lesson.

4.2.7 Mathematics and language arts, or English, imposed quite different demands for interaction. Where new mathematical concepts or processes were introduced, home tutors gave direct instruction, regardless of the ages and year levels of the children. That involved their interpreting the learning materials provided by the school, demonstrating the mathematical concepts or processes in ways that were meaningful for the children, and practising their application in examples which the home tutors worked through with the children. The amount of time spent on these activities depended upon how quickly the children showed understanding, and how skilful the home tutors were in instruction. Obviously, some children required more explanation and guided practice than others. Similarly, the home tutors had to be more alert in their desk supervision of some children. Even so, while all children worked alone on practice sets to consolidate their learning, the home tutors 'kept an eye' on them, occasionally correcting errors and encouraging good work.

4.2.8 In language arts lessons, much of the preliminary work before imaginative or transactional writing consisted of dialogue between the pupil and the home tutor. While the creative process of writing was going on, however, the home tutors generally tried not to interrupt the flow of ideas. This was a time of intense concentration and home tutors tried not to intrude into the child's field of consciousness. Similarly, during art, science and social studies lessons where activities of a creative, discovery, or experimental kind were undertaken, the home tutors perceived less need for close supervision and allowed greater scope for children to work alone. Frequently, home tutors took those opportunities to attend to their other, non-instructional duties. It was interesting to note that subjects and activities of these kinds often were left until later in the day when the children were 'tired'. Perhaps it is assumed that children find these subjects more intrinsically interesting and were more self-motivated. Alternatively they might be seen to be intellectually less demanding or even less important. Maths and the functional aspects of language arts were scheduled early when the children were alert, suggesting perhaps that they are more important or intellectually demanding.

4.3 PROBLEMS WITH SCHOOLWORK

4.3.1 Some indication of demands made for direct instruction of children is offered by the frequency of recurring problems in schoolwork. In the interviews, home tutors were quizzed about persistent problems which their children experienced. The results are summarised in Table 7. The most troublesome were persistence in working on set tasks, self-correction, and completing set tasks in a reasonable time. The other factors in Table 7 caused varying amounts of difficulty. There were differential problems for understanding written instructions. Some of them could be attributed to the phrasing and construction of lesson materials sent out from the schools. For example, even when the children could read written instructions with understanding, they did not always comprehend them. Sometimes it was because the language used was too advanced for the children, and in other cases it was because the wording of instructions was ambiguous. Consequently, home tutors reported that, at all levels of schooling, they had to check how children had interpreted written instructions.

4.3.2 Maintaining motivation and persistence strikes at the very heart of the difficulties faced by both home tutors and primary distance education pupils. Even when all other problems of organising time and

TABLE 7: NUMBERS OF CHILDREN AT THREE LEVELS OF SCHOOLING WHO HAVE TROUBLE WITH SELECTED ASPECTS OF SCHOOLWORK

UNDERSTANDING ORAL INSTRUCTIONS					UNDERSTANDING WRITTEN INSTRUCTIONS			
UPPER	MIDDLE	LOWER	ALL	**HAVE PROBLEMS**	UPPER	MIDDLE	LOWER	ALL
0	0	2	2	**MOST TIMES.**	0	0	25	25
3	6	13	22	**SOME TIMES**	2	10	6	18
9	18	17	44	**RARELY**	10	14	1	25
12	24	32	68	**TOTAL**	12	24	32	68

ORGANISING SELF TO WORK					PERSISTING WITH SET TASK			
UPPER	MIDDLE	LOWER	ALL	**HAVE PROBLEMS**	UPPER	MIDDLE	LOWER	ALL
0	0	10	10	**MOST TIMES**	1	1	7	9
3	10	9	22	**SOME TIMES**	10	19	24	53
9	14	13	36	**RARELY**	1	4	1	6
12	24	32	68	**TOTAL**	12	24	32	68

SELF CORRECTION					COMPLETING SET WORK IN TIME			
UPPER	MIDDLE	LOWER	ALL	**HAVE PROBLEMS**	UPPER	MIDDLE	LOWER	ALL
0	1	24	25	**MOST TIMES**	0	0	1	1
5	16	6	27	**SOME TIMES**	0	9	12	21
7	7	2	16	**RARELY**	12	15	19	46
12	2	32	68	**TOTAL**	12	24	32	68

LOWER = LOWER SCHOOL, PRE-PRIMARY TO YEAR 3
MIDDLE = MIDDLE SCHOOL, YEARS 4 AND 5
UPPER = UPPER SCHOOL, YEARS 6 AND 7

space for learning, managing competing demands upon time and so on, have been sorted out, maintaining motivation and persistence remains a constant concern. Observations of lessons indicated that the degree of interest and involvement demonstrated by the home tutor has a direct bearing on the child's attitude towards schoolwork, like any other teacher's. Those who were enthusiastic and imaginative, and able to communicate that to their children, were rewarded by interested and motivated pupils. Where a home tutor was herself unenthusiastic, lacked confidence, or suffered visible stress in the dual roles of mother and teacher, there appeared to be corresponding lack of enthusiasm, self doubt, or anxiety in the pupils.

4.3.3 In part, the need for the home tutors to interact with the children is because they are isolated learners. They do not enjoy the stimulation of a group of peers, and young children in primary distance education often think that they are the only ones who are subjected to 'school' every day. This can be particularly troublesome in the first year when younger brothers and sisters are still free to play or to 'go with dad' to work about the property. Air lessons certainly help to alleviate this effect of isolation, but it is only for a brief half-hour session each day. For the rest of the time, the home tutor has to be classmate as well as teacher:

> 'If I don't do some cutting and sticking at the same time, he won't get the work done.'

4.3.4. It is sometimes the sheer volume of work which is daunting. The amount of writing involved in distance education is greater than normally would be expected of a child in a conventional classroom. This is because children in distance contexts do not have the opportunity to spend time in discussion and general social interaction with their classroom peers. The emphasis is on writing rather than talking and listening. In the junior primary years this is demanding upon the home tutors who have to write down the children's thoughts for them. In the early years, children are willing to tell Mum a story and to get Mum to write down sentences for them to copy. As time goes by, although the story may be told willingly, getting the children to write it down becomes an exercise in patience, tact, or undisguised bribery. One mother described how her children tried to avoid written work:

'Because correspondence demands so much writing from a very early age, and it's a thing that bugs all little kids - they don't mind how long they wax eloquent about a story, they will read to you, perhaps for ever - but to have to write that story down! "Gosh Mum, I promise I'll do it tonight. I'll finish it in the morning, Mum" and this goes on endlessly.'

4.3.5 Another home tutor, this one a governess, explained why she selected work for the children to do. A child who has a mathematics set before him or her each day, for example, and which he or she is doggedly expected to complete, is often discouraged right from the start:

'Some of those maths papers can be time wasting. To sit down and do forty examples of the same thing can be pretty time consuming, especially if they can do it.'

Q. 'Do you spend a lot of your time during the lesson giving instructions or advice?'

A. 'If it's something they've done before, no. If it's new work I can spend quite a bit of time. I spend time on anything new that comes up in maths because they just don't know what it's about.'

4.3.6 Clearly, this places a considerable responsibility upon the home tutor. Her task becomes that of a teacher, not merely a supervisor. Elsewhere, there is an expectation conveyed by the schools themselves that the home tutors will ensure that the children's learning is thorough. The implied expectation is that the home tutor's teaching will be similarly thorough, as illustrated in the instructions from a Mathematics set sent out from a school of the air.

'No specific time limit is set for SRA level 1, but use the following two points to govern the pace of your teaching:
1. All concepts must be taught by the supervisor.
2. The pupil must understand what he/she has covered.'

Two factors, both of them crucial to the quality of instruction, are introduced here: feedback and the pace of learning.

4.3.7 There is unavoidable delay between the distance education pupil completing worked sets and their being 'marked' and returned by the distance education teacher. It is usually not less than two weeks, but can be up to six weeks or more in some circumstances.[1] That lag is of the nature of distance education, but because immediate feedback is essential for efficient learning, it means that either the learning

materials must have self-correction built into them, or the home tutor must correct all work as it is completed. The first apparently causes problems for most families. The data in Table 7 indicate that only 24 per cent had either few problems or none with self correction: the rest had problems at least some of the time, and one-third had problems most or all of the time. Of course, the age of the children was important. Those in year one could do no self-correction and it was left to their home tutors. Older children coped better, but relied upon having clear answers, and it is not possible to provide them in all subjects. Consequently, home tutors corrected a great deal of the work done at home.

4.3.8 Answers given to questions about correcting children's work - shaping, praising, identifying errors - illustrate the nature of and reasons for the home tutors' involvement.

> Q. 'Do you do any correcting here, or is it all sent away to the correspondence school?'
>
> Governess: 'I correct them here. I go though the work with them...Most corrections I prefer to do here because if I send it back to Brisbane it could be a month before it comes back. I feel that's too long.'
>
> Mother (i): 'The stuff I send off, I don't mark that. We don't send everything away, just the stuff she does for teacher. The teacher corrects that. I correct the stuff she does during the day. The tests are what go to the teacher.'
>
> Mother (ii): 'Depends on time. Sometimes I end up having a quick glance through it to see if the school work has just been done, and then it gets put in the mail.'
>
> Mother (iii): 'I started when we had the three-months turn-around on the mail. I couldn't see any point in the child suffering with a mistake for three months when it could be corrected on the spot.'

4.3.9 The degree of the home tutor's commitment obviously is an influential factor in correction and feedback. In the samples given above, the mothers designated (i) and (ii) were mothers of two of the children categorised earlier as working in solitary learner contexts. The other two examples from modified urban and integrated schoolroom contexts reflect the more common experience. The importance of this aspect of the home tutor's role was emphasised by contrasting it against the perceived value of marking done at the school. Few families found

time to go over returned, corrected work in depth. Some considered it to be a meaningless exercise for the children because of the time which had elapsed between their sending it away and receiving it back corrected. Children generally were reluctant to go over what they regarded as 'old' work: once it had been completed and despatched they had put it out of their minds. This also meant that unless a particular problem was pointed out by the teacher, and additional work sent to help in that area, little or no time was spent on remediation.

4.3.10 At the other extreme, little time was devoted to enrichment. Several families said that they tried to make time for enrichment work, but they found it difficult to set aside extra hours for both pupil and home tutor to encompass this. Almost without exception it was felt that children are set far too much work. The families often found it difficult to complete the set work on time, even on 'normal' or 'ideal' days. To some extent, 'enrichment' consisted of what happened in their daily lives. One mother described it as

> '...work we do as a family. There's a lot of voluntary poetry goes on around the place, and music, which is purely and simply ourselves. But not formal enrichment. There just is not time...'

At another point she argued for lessening the demand to complete and return written sets:

> 'I really don't think our kids would suffer at all if there was a lessening of this pressure. They have things that they learn around their homes, around their fishing area, their mining area, their missions, police stations, or wherever they happen to be. Out in the bush they have such a wealth of experience around them that kids in town don't have. It's a compensation.'

4.3.11 Not many recognised the compensation, however. Most found their timing thrown into confusion by having to complete not only the correspondence sets, but also having to complete extra work given in air lessons as 'homework'. The notion is somewhat anachronistic and was not readily accepted by children who do all of their schoolwork at home. 'Homework' was often of an art/craft nature, or, as in one instance observed, drawing a map of the world and colouring in the separate countries. Extra work of this sort is time consuming.

4.3.12 In spite of the pressure of schoolwork, the data in Table 5 indicate that only 5 out of the 36 home tutors reported that the children have persistent trouble completing set work in a reasonable

time while 17 reported that they rarely or never have problems with this. This evidence of differences in children's capacity to meet deadlines needs to be set against the evidence presented in the previous chapter that most families find it difficult to adhere to a regular schedule and devise all manner of strategems to ensure that deadlines are met. Hence, the pacing of lessons can be inconsistent, in spite of careful planning by those who prepare and write the curriculum materials.

4.3.13 There are two additional matters which affect the pace of lessons. The first is that even families with a fairly regular timetable have found that they had to vary the time devoted to particular subjects. In some cases that was because individual sets did not contain a consistent amount of work for each day. In others it was because the children grasped one set of facts more quickly than others and their rates of learning varied. This was directly relevant to the second variable affecting the pace of lessons and that was the matter of individual differences alluded to several times already. The variation among children in their speed of learning needs little elaboration here. It is generally acknowledged that some pupils need more time and help to master a subject than do others.[2] It is sufficient to note here that some home tutors found that their pupils had no difficulty in completing set tasks in a reasonable time; their problems were how to fill in the days with worthwhile, additional schoolwork. Others found that the pupils were slow and spent more time on practice than others. Sometimes these extremes were noted in children of the same family. Whatever the circumstances for each child in each home, however, the onus was upon the home tutor to attempt to maintain a consistent pace in lessons and to ensure that children were meaningfully engaged in school learning at all times.

4.4 COMMENTARY

4.4.1 The evidence reported in this chapter has validated some of the assumptions made about distance learning. Primary children do become more self-reliant as learners as they move into higher grades, especially where home tutors also have younger children to supervise. Where the home tutor's attention has to be divided, older children are simply expected to work more on their own, although in most cases they are seldom unattended. This does not mean, however, that they become fully effective as independent learners as working alone does not mean working independently and effectively. Children at all year levels

were reported as having difficulties in developing skills which are fundamental to effective independent learning. These included problems in understanding written instructions, getting started and then persisting with set tasks, self-correcting and meeting deadlines.

4.4.2 These difficulties which many primary distance learners experience place additional loads on the home tutors. Not only do they have to organise the overall program, but also they have to ensure that their pupils develop independent learning skills which many children in conventional classroom contexts have not developed by the completion of their secondary schooling. A major requirement of distance teaching is therefore that the home tutor can understand the principles of independent learning and that she can, in turn, develop appropriate skills in her pupils. A further expectation, although not always made explicit in correspondence lesson materials, is that the home tutor will be more than merely a *supervisor* of learning and that she will carry out instructional tasks which are in some respects akin to those of a professional teacher. These require her to understand the assumptions, aims and structure of the curricula within which she is working with her children.

4.4.3 The picture of primary distance education which emerged in this study is one of interdependence among the pupil, the home tutor and the distance teacher. These last two are of special importance because of the different, but complementary functions they perform in educating the child. Margaret Harley, in discussing the difference between teachers and parents in school-based and home-based programs, summed up their respective roles in this way:

> 'In [the home-based setting] the parent acts as the main facilitator and educator as she becomes actively involved on a day-to-day basis with her own child or children of varying ages, within the structure of the home and the family setting... Here the role of the teacher changes radically from an active and interactive one in working daily with children in a school environment, to one of supporting parents (or governesses) in a non face-to-face situation as they work with their children at home.'[3]

4.4.4 The home tutor's role is a complex one, especially where she is the mother of the pupil and has unavoidable duties to perform which are additional to her teaching role and her domestic roles of mother and homemaker. It was shown in Chapter 3 that time-tabling and the organisation of lessons and learning materials are undertaken by the home tutors. In this chapter it has been shown that they also take on

functions which are usually ascribed to teachers: preparing lessons, interpreting instructions, giving explanations and advice, participating actively in planned learning experiences, maintaining motivation and persistence, responding and reacting, checking and marking the pupils' work, and so on. In short, within the schoolroom in the home, the home tutor is 'the main facilitator and educator'. But her responsibilities fall short of those of teacher. She does not have responsibility for the curriculum. Her role in the curriculum process is that of 'facilitator'. She 'operationalises' the curriculum. The responsibility for selecting and preparing curriculum content, organising its sequence, and evaluating its effectiveness in the children's education rests with the distance education teacher.

4.4.5 The curriculum materials themselves belong to nobody in the schoolroom context. The teacher who prepares them is not the one who implements them. That is done by the home tutor. Hence, the situation in primary distance education is one step further removed from that described by Keegan: 'In distance education the teacher prepares learning materials from which he himself may never teach. Another teacher may use the materials and evaluate students' work'.[4] In the partnership which characterises primary distance education the distance education teacher prepares the learning materials and then 'supervises' their application by the home tutor in the schoolroom context. Together they 'supervise' the child's use of the materials. The danger is, of course, that the focus of the curriculum designers becomes solely the curriculum materials rather than the children for whom they are only indirectly responsible.

4.4.6 Within this structure it was observed that the child works closely with the home tutor. Sometimes he or she works alone, sometimes even unsupervised, but seldom independently. Even in the solitary learner context, an adult checks that the set work has been completed as directed. The nature of primary distance education is such that the child depends upon a responsible adult to mediate between him or her and his or her learning materials. The degree of dependence varies, but it is never relinquished.

FIGURE 8: PARTICIPATION IN LESSONS IN THE URBAN CLASSROOM CONTEXT

THE NOTIONAL TIMETABLE

THE FAMILY

Here the model of the 'mini-school' has come to life. A separate building situated about 100 metres from the homestead has two rooms which are 'school'. Mother takes the two older children who are in middle primary, and the governess devotes her time to the youngest who is in year one. The older children have been assessed as 'gifted and talented' and the principal of the nearest school has offered extra tuition in an effort to extend them.

The older children frequently work on their own. The mother has fostered independent work habits, and they are very much in charge of their own program.

> 'I do tell them what to do, but I don't have to. If you say, 'Go and do what you've got to do', they'll go and do it. Sometimes you have to remind them. They might forget to do the school of the air work that has to be done for on-air work, or they might forget they've got something else that they have to get done for somebody else. You might have to jolt their memories about certain things.'

Q. 'Do you spend all the time in the room with the grade one child?'

A. 'Especially in the first term. I've found that you can't leave him with much. He and I used to do a new sheet about three times a week. We were doing it in such a way that I'd sit there, he'd tell me what he wanted to write, we'd talk about it, and then he'd start putting it in sentences so he could write it and I'd tell him. He'd say, "I want to write, 'This is a boy'". I'd say, "Well what does 'there' start with?" and he'd know its TH. I'd be there to show him which line to write on and everything else and just make sure that he was doing it right... I can't leave him doing that by himself, but I can leave him doing cutting out or colouring. I say, "You do that now while I do this", but usually I'm there in the room with him all the time just checking.'

LESSON OBSERVATION

AIR LESSON CHILD 'C'

TIME COMMENCED: 8.30am FINISHED 9.00am

COMMENT: Year One, 'C' needed a lot of interpretation and help. The SOTA teacher's lesson was above the heads of the children - a bit advanced for their age group.

MATHEMATICS

Governess gets 'C' to assist in making aids for this lesson. He helps to cut out/colour in portions. If he fails to grasp the idea in the way which as been set, the Governess tries out different ways.

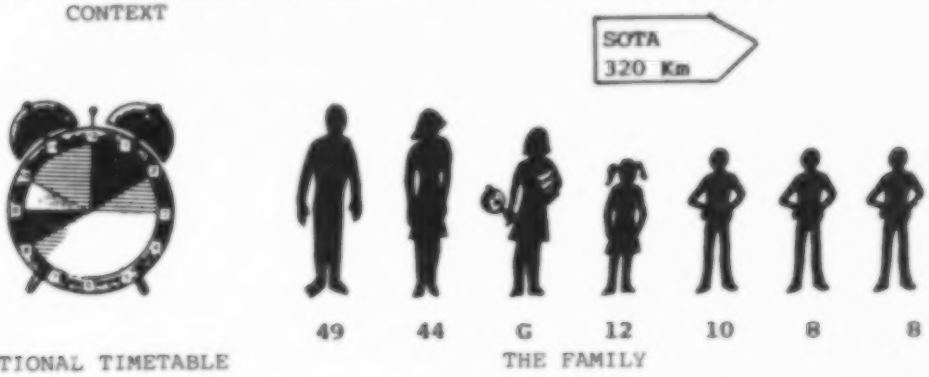
Frequent breaks in formal learning - playing games used as incentive 'when we've finished this we'll play cricket'. Play a lot of catching games to improve coordination.

ENGLISH

'C' keen to work on own but hasn't yet enough skills to do so. e.g. 'Let me write that'. Governess teaching/ stimulating/reinforcing the whole time. She takes part in everything.

NOTE: At time of visit Mother was ill and in hospital. Governess was coping with all three children. The two elder ones did a lot of work on their own after general instruction from Governess.

FIGURE 9: PARTICIPATION IN LESSONS IN THE MODIFIED URBAN CLASSROOM CONTEXT



But for the fact that school is conducted in a part of an L-shaped lounge room - partitioned off by portable screens - the situation here is more like that of an urban schoolroom. The four children and their governess work at least a normal school day, and sometimes longer. The governess is a trained and experienced teacher and her only deviation from a classroom routine is to allow the two older children to work at their own pace. They come to her if they need assistance. Cards are prepared for each set of work, allocating what the governess considers to be a reasonable amount to be completed each day. The older children choose how they will tackle a day's program. The twins in year 4 are taught in a much more conventional manner, although the governess tries to deal with them individually, setting one to work alone while she helps the other with a new concept or problem.

Q. 'How do you organise your school week? Do you have a timetable?'

A. 'No, not one that's stuck to so that you do a half an hour of this and a half an hour of that. I have cards written out for each child, what they have to have done for each day, and that's what they follow. I usually tell the boys what to do because I think they need direction, but with 'A', she's left on her own because she can work on her own. Whatever she wants to do she does. If she wants any help she asks for it.'

Q. 'So she gets her work completed, but you've already given her a card?'

A. 'Well, I haven't given her a card. I've just started with her a sheet of paper with day 1 to 10 written on it, then the subject areas, and divided them into what she has to have done each day.'

Q. 'Obviously from what you've said, certainly from the cards you have, you must spend time preparing before the lesson. How much time does that take you?'

A. 'I've never really worked it out. What I usually do, while they're working in the schoolroom, I do it then. Some days the children ask questions, others they work away. If I don't finish it in the day I finish it in the evening. I suppose it does take time. All I do is - well everything's organised in subject areas and I just go through and write down what they have to do, what book they have to use, what page, and they know exactly what to do.'

LESSON OBSERVATION

AIR LESSON CHILD 'A' TIME COMMENCED 12.00 noon FINISHED 12.30pm

'A' takes pencil and paper to radio.
Governess sits down at last in 'A's' seat.
Poetry/Thesaurus - 'Tiger'
'A' left to her lesson. Governess in room keeps an ear.

MATHEMATICS The children work alone - ask for assistance and are attended to in rotation by governess. She is constantly working with one or the other.

'A' appears to do more work on her own. She conducted an experiment for science.

AIR LESSON CHILD 'B' TIME COMMENCED: 1.30pm FINISHED: 2.00pm

Year 4/5 Governess sat with 'B' through the lesson. He has speech impediment. Governess doesn't interfere much, but is there for discussion.

ENGLISH 'B' wanted continual assurance that what he was doing was right. Probably most demanding of them all.

AIR LESSON CHILD 'C' TIME COMMENCED: 8.00am FINISHED: 8.30am

'C' left alone, but governess kept an ear. After setting others to work she assisted 'C'.

MATHEMATICS Hands up to ask for assistance. Governess selects work to do - does not expect all examples to be done. Marks a few at 'C's' desk. Out of 25 examples, marked 15 to 20.

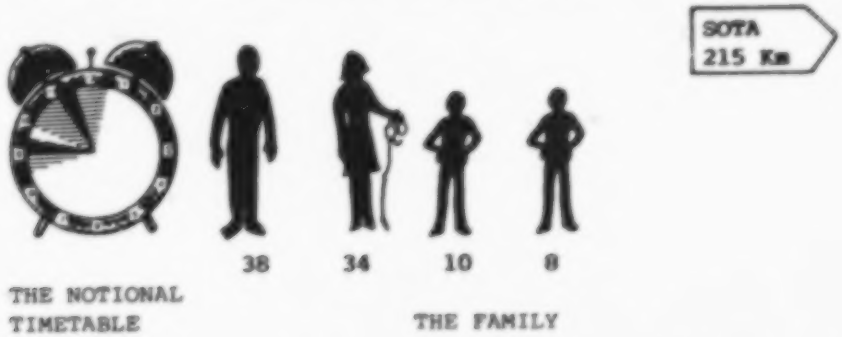
AIR LESSON CHILD 'D' TIME COMMENCED: 8.30am FINISHED: 9.00am

Governess sat with 'D' and kept his mind on the maths lesson - basically 7 times table but with others mixed in. Other children worked quietly.

Governess heard 'D' read in another part of the room and 'controlled' those left by instructions to continue their work.

COMMENTS: Works fairly much as a classroom. Governess's teaching experience coming to the fore. She does not sit down - constantly moving among the children and conducts lessons with the twins together. They do get time to dream. While the governess concentrates with one person on a particular problem, for example 'C' and his maths. Distractions are minimised. When machinery started outside, the curtains were drawn to stop the children from peering out.

FIGURE 10: PARTICIPATION IN LESSONS IN THE INTEGRATED CONTEXT



Here the schoolroom is run as a conventional classroom with blackboard work, and so on. Mother is 'right-hand man' on the property. If assistance is needed, school is left, to be returned to later in the day or made up by working on Saturdays. Otherwise the hours of schoolwork are as regular as possible each morning.

> 'We do set hours which are only interrupted if somebody comes or if we've got to go and do something in the paddock.'
>
> The day starts at 7.30am (summer) or 8.30am (winter) and finishes at lunch time.
>
> 'Normally that would be the finish of their school day. If they did come back after lunch it would be only to do project books for social studies or something.... I'd never attempt maths after lunch.'

Q. 'Do you start off with a particular subject every day of the week?'

A. 'I change it around, depending on ... some papers will have more new maths work so I'll probably give them more maths. I'll also go on what the kids are like. If the kids are very bright and chirpy of a morning, that's a good maths morning, but if they've had a late night and they're a little bit stroppy in the morning, it's a waste. Well, I'd start off with something a bit lighter and gradually warm up to the maths through the morning. Some days, I call them 'Dumb Days', I don't do any maths at all on those days if the kids can manage. I can have a day when they don't do any maths from the paper at all, just according to how they are.'

Q. 'Before a lesson, do you do much in the way of preparation? Do you go through the papers beforehand?'

A. 'If I'm going to start a new paper on Monday, I get the papers Sunday and Sunday night go through them and mark what I feel are the most important parts and parts that...I know all of the parts of the paper are important, but there's a lot in the paper that - all the Art activities and that - in my list they come after new maths. Friday, if they've done all their work, they do the art and stuff.'

LESSON OBSERVATION

AIR LESSON CHILD 'A'

Sunday - no air lesson.
Public holiday the following day.

MATHEMATICS

Mother and child read instructions and got ready for a 'test'. Made sure that problems were answered before test commenced. Question-answer.

'A' commenced test. Thought about questions while looking around room (or just day dreamed?). Before answering appeared to think, then wrote, asked for clarification.

Mother went to help 'B', but responded quickly to 'A's' request and sorted out his problem.

Test finished in twenty minutes. Mother gave 'A' some spelling to learn while continuing to work with 'B'. Helped with Social Studies.

MATHEMATICS CHILD 'B'

'B' waited until Mother was ready to assist. Got papers ready and sat quietly.

Mother and child went through the paper together - a concentrated question and answer session. A fair amount of interpretation by Mother. Drawings done by Mother to clarify a point.

Mother set work, 'B' worked alone and reported when he'd finished. Mother gave him more to do and went back to work with 'A'.

COMMENTS: One-to-one situation virtually - time divided between children. Child not left long without something to do. Organised, disciplined and very much a 'classroom' atmosphere but with more attention to each child. Once again, dependent learners. These children worked quietly at set work. The incentive to get work done was afternoon with pig shooters. Were working Sunday because had Friday off to go to town. That is a make-up day.

CHAPTER 5: PRIMARY DISTANCE EDUCATION AND COMMUNICATIONS TECHNOLOGY

5.1 THE NATURE OF PRIMARY DISTANCE EDUCATION

5.1.1 The principal concern of this study was to understand how children cope with distance education at home. Several pertinent issues have been raised. For example, it has been shown that children do become more self-reliant in their lessons as they progress through primary school; that although the physical contexts of schooling vary, home tutors adopt similar organisational strategies; and that learning problems experienced in distance contexts vary greatly among pupils, but some are of general significance across most contexts, especially understanding written instructions and organising for work, persisting with study tasks, completing set work in time, and self-correction. Some of these themes have been taken up in previous comments. Others offer directions for curriculum development and future educational uses of communications technology.

5.1.2 Among the matters which emerged from observing the operation of distance education within the homes of pupils were the following:

- Most often the home tutor was the mother of the child. She had to organise her day so that lessons could be fitted in with other regular duties which competed for her attention.
- The place where lessons were conducted varied from home to home. However, it was possible to describe four recurring contexts of schooling which were categorised here as an 'urban classroom context', a 'modified urban classroom context', an 'integrated context' and a 'solitary learner context'. These were distinguished from one another in terms of the extent to which the schoolroom was kept apart from other aspects of life and work in the home; the extent to which there could be a commitment to schoolwork in the sense that other domestic activities did not intrude into school time; and the amount of time that the home tutor was able to be present while 'school' was in progress. It cannot be claimed that any of these was demonstrably a superior context of school learning, but clearly they had an important bearing upon how lessons were managed.

- Parents and home tutors felt pressure to have the children's lessons completed and despatched on schedule. Furthermore, they felt compelled to ensure that all lessons were done thoroughly even if it meant working at weekends or during holidays to make up for lost time. Several explanations were given, but most frequently the pressure was related to fear that the children might miss out on essential knowledge or skills.
- Maintaining motivation and persistence was seen to be a primary responsibility for home tutors. The degree of interest and involvement they displayed had a direct bearing on the children's attitudes to school learning.

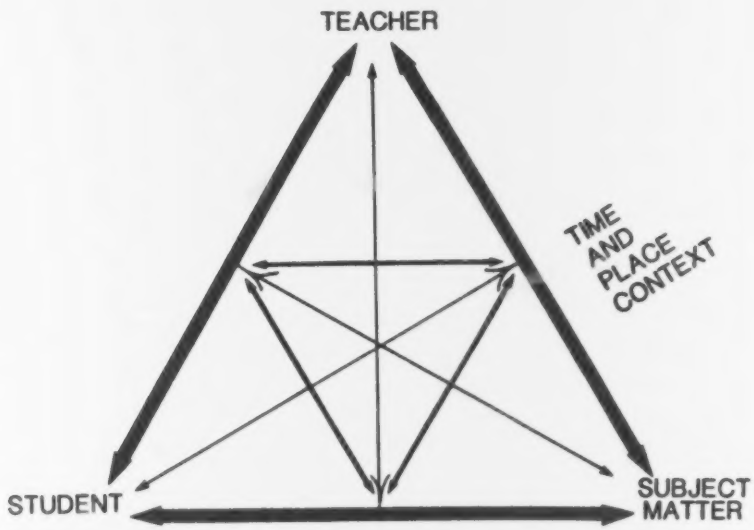
5.1.3 Perhaps the most important finding was a persistent reaffirmation of the importance of the home tutor for the effective functioning of distance education at the primary school level. That knowledge is not new. A pre-requisite for the enrolment of any child in all of the primary correspondence schools and schools of the air throughout Australia is that a responsible adult, or 'home tutor' as has been the term used consistently in this report, can be present at all times to supervise the lessons. Even so, previous research has suggested that the teaching functions of the home tutors generally are not well understood.[1] It was evident in the present study that the instructional tasks undertaken by home tutors are in many respects akin to those of teachers in conventional classrooms, but the education of the child is a shared responsibility. The distance education teacher and the home tutor perform complementary tasks, each of which is essential to the other, and which together ensure that distance learning is efficient and effective.

5.1.4. One way of coming to terms with that partnership in distance education is to compare the processes of primary distance education with the process of teaching in conventional schools. In the latter, teaching normally involves interaction among three elements, a teacher, a pupil and some subject matter. That interaction is face-to-face and reactive. The child and the teacher work together and with the subject matter of the lesson and, provided that rapport is established between them, each elicits responses from the other which establish pathways to learning. Ronald Hyman characterised the relationship as 'dynamic' and proposed there are multiple connections among the three elements in the schoolroom.[2] He suggested that:

> 'We cannot understand the nature of teaching by looking at only one or two elements of the teaching relationship or by thinking of teaching as static. We must consider all three elements together in order to understand the interaction that occurs during teaching. We must see that the relationships are always changing. Furthermore, we must note that the interaction between any two elements influences how each of the other two will react to the third one, and, in turn, how all the elements will react together.'
>
> (1974:19)

He represented this concept of teaching diagramatically as follows:

FIGURE 11: TEACHING: TRIADIC AND DYNAMIC



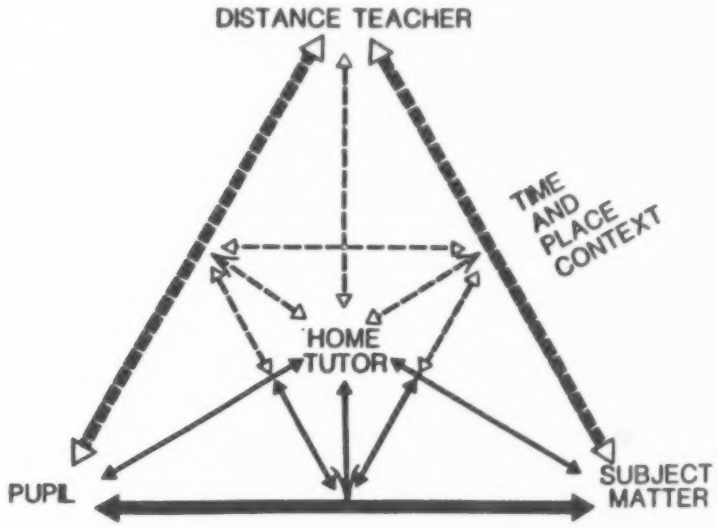
SOURCE: Ronald T. Hyman, Ways of Teaching. Philadelphia: J.B. Lippincott Company, 1974, p.20.

5.1.5 In distance education the three elements of teacher, pupil and subject matter continue to be essential components of the teaching and learning process, but the teacher operates at a distance removed. The physical distances are considerable. In the present study the homes visited were situated at an average distance of 260 kilometres from their respective schools. Previous research by Taylor and Tomlinson estimated that approximately 80 per cent of all children enrolled with schools of the air lived more than 200 kilometres from their respective schools.[3]

5.1.6. This geographic separation of pupil and teacher is compounded by the time lag between submission and return of the pupils' work. Attention was drawn to this in the home tutors' comments about the perceived value of marking done at the school. In their opinions its effectiveness was diminished because it was always a delayed response. The average minimum rate of return of correspondence lesson materials exchanged between home and school is in the order of sixteen to eighteen days.[4] In these circumstances it is difficult to establish the same paths to learning which result from the direct interaction of teacher and pupil. Neither is it assumed that they will be the same. A major premise on which primary distance education proceeds is that lessons will be supervised; that the home tutor will intercede between the distance teacher and the pupil and that direct interaction in daily lessons will be among the pupil, the home tutor and the subject matter.

5.1.7 The nature of the interaction might be represented diagramatically using an elaboration of Hyman's model as follows:

FIGURE 12: A MODEL OF THE DISTANCE TEACHING



Here, three modes of interaction are indicated. The first, that among the pupil, the home tutor and the subject matter is direct. It occurs at the time and place of learning and is likely to be dynamic in the sense that it changes constantly. Similarly, multiple paths of interaction like those suggested by Hyman probably will be created. Home

tutors commented in interviews about their involvement at various stages of planning, preparing, implementing and responding to lessons. Likewise, multiple paths will be created in the second mode of interaction, that among the pupil, the distance teacher and the subject matter, but here the interaction will be indirect and delayed. This is not to suggest it is less important. Home tutors indicated that their pupils identified strongly with their school-of-the-air teachers. All manner of techniques are used to maintain strong connections, most commonly through comments on students' work, through letters and audio-cassette recorded messages, and, probably most important in the schools of the air, through air lessons and scheduled clubs and discussion times. Even so, the distance teachers are remote in contexts of time and place, and in the actual context of learning the home tutors act for them. Hence, in the model above, a third mode of interaction is indicated, that between the distance teacher and the home tutor.

5.1.8. The nature of the shared responsibilities of home tutors and distance teachers was discussed earlier (see page 52). The primary role of the distance teacher in the curriculum and instructional processes is acknowledged, but it is the home tutor who provides the link between the pupil, the subject matter and the distance teacher. Without that link primary distance education is ineffective, as was demonstrated by the three instances of solitary learners identified in this research. The evidence here suggests that most children require significant support such as motivation, encouragement, guidance and clarification, even through to the end of primary school. This is hardly surprising as even by the end of the secondary school many students have not acquired effective skills or habits of independent study. Of course, this research has shown that pupils are left to work alone more in the higher grades, but this does not necessarily mean that they are working effectively. In the absence of some help and guidance those learning strategies do not develop as part of a child's general development. Those skills need to be learned and if this is to happen home tutors must be made aware of what those skills are and how they may be imparted.

5.2 THE CHILD AS AN INDEPENDENT LEARNER?

5.2.1 Primary distance education relies strongly upon personal contact for its effectiveness. The function of the home tutor is essential, regardless of the medium for delivering the learning materials. This might be demonstrated in something as basic as getting the child into

the classroom. Where 'school' is not a formal affair entailing impersonal 'authorities', where times and even days are irregular, children do not take it for granted that school will be held every week-day. Making a run for it is always worth a chance. The home tutor often has to spend time just finding her pupil and getting him or her into the classroom.

5.2.2 Similarly, the development of habits of independent learning will depend as much upon the willingness of the home tutor as upon their being incorporated into learning materials. Some tutors, with the best intentions in the world, do not give the child sufficient opportunities to develop self-reliance. This can happen only when the home tutor has confidence to leave him alone to have a go, regardless of the consequences. The home tutor without that confidence thinks that the child must get schoolwork right all of the time; she will anticipate mistakes and correct them before they are made because of a wrong assumption that children learn only by getting things right. Obviously this is not so, even in an ideal school classroom.

5.2.3 Convincing an anxious home tutor that the child should be left alone to succeed, or to learn by making his or her own mistakes, requires more than mere words, however. One mother likened her initial disbelief in the reassurances offered by the school-of-the-air teachers to her first experience of pregnancy and childbirth:

> 'Of course the teachers tell you not to worry. But it's like when I was pregnant with my first child. There was my obstetrician telling me, "Don't worry, it won't be too painful and if it is I'll give you an injection". What did he know? It did hurt, and when he gave me the injection it didn't work!'

Part of the home tutor's anxiety is not knowing what to expect or what is expected of her. This is heightened by the stress imposed and felt when expectations can't, won't or don't match the realities of teaching and learning at home.

5.2.4 Many of the experienced home tutors observed in this study had come to terms with their own conflicts and were relatively self-assured about their functions in distance teaching. Even so, they had sure knowledge that their presence in the schoolroom was important. In this there is something of a dilemma. Children become more self-reliant as they grow older, but the intercession of the home tutor at several stages in every day's lessons is required throughout the years of primary schooling. The intellectual independence of the child grows out

of a physical dependence upon the home tutor. The challenge before curriculum designers is to incorporate into distance education materials opportunities and directions for the development of independent learning skills which take proper cognizance of the dependent relationship.

5.2.5 It must be assumed that there is interaction at each phase of learning. It must also be assumed that in each phase several activities will be performed concurrently. The learning materials must explain what is to be learned and how it is to be learned, as well as attempting to stimulate the learner to engage in the task. The learner must understand the task and prepare himself and his materials to carry it out. This might involve skills of interpretation, comprehension and organisation. It might also require the direct participation of the home tutor to read, interpret and translate instructions for learning. Therefore she might be engaged in organising the learner and what is to be learned at the same time as she is managing and preparing the place, time and resources for learning. If there are such multiple interactions at several phases of the lesson, and the evidence presented in this study suggests strongly that it is so, then provision must be made for them in distance education materials whatever their medium of delivery.

5.3 ENHANCING DISTANCE EDUCATION

5.3.1 If primary distance education is to be enhanced, either by modifying existing elements or by educational uses of communications technology, the model above suggests that change might best be effected by attending to three of its components. First the effectiveness of distance teachers and home tutors might be improved; second the learning materials might be made intrinsically more interesting and provide more direct advice on efficient learning strategies; and third, the interaction among the distance teachers, home tutors and pupils might be improved. Each of these might require different strategies for change and insufficient evidence was gathered in this research to offer comment on some of them. For example, the distance teacher was not examined closely and it would be improper to offer opinions which are based only on hearsay evidence presented as asides during interviews. Similarly, the learning materials were not evaluated in detail. It was observed, however, that in some of the most recently developed materials the tasks to be performed by home tutors and pupils are made explicit and are highlighted in the text.

5.3.2 An important principle emerges here. Curriculum designers, course writers and distance teachers cannot assume that once the learning materials are developed and dispatched to the pupil that the job is done or that the connections necessary for learning to occur will happen. Indeed, there was strong evidence in some of the better learning materials that such assumptions are not made. On the contrary, rather than assuming that those connections will occur, course writers have assumed that they will not if appropriate directions are not given for them in context. Hence the more effective primary distance education materials offer explicit instructions at appropriate stages in the text.

5.3.3 This is particularly important for improving the effectiveness of the home tutor's role. The evidence accumulated here indicates that her role is vital, but it was also clear that home tutors frequently lack formal knowledge and skills of pedagogy. It would be unreasonable to assume that they should have them since, except for a few former schoolteachers, most of the mothers who teach their children are untrained. Even though consultation and advice is offered at seminars and camp schools, it should not be assumed that such things as the rudiments of the teacher of reading are understood where no formal training has been undertaken. It follows that if the home tutor's performance is to be improved and if the anxiety about the consequences of that performance which was referred to so frequently during interviews is to be lessened, direct support must be provided within the learning materials presented to her by the school.

5.3.4 To illustrate this point, the example of the teaching of reading might be used. Effective reading and writing are the basis of primary education and the development of independent learning. These skills are central to distance learning because of the heavy reliance on printed materials. With the exception of the few trained teachers involved, there is no evidence that home tutors who are responsible for the child's learning at the instructional level have any formal training in the teaching of language and literacy. A major implication of the research is therefore that parents may need assistance in providing direct help to their children in the areas of teaching reading and writing.

5.3.5 There are many approaches to assisting parents.[5] Some of the skills which parents might acquire include Neurological Impress Methods (NIM) which, simply stated, are the techniques and skills involved in

'reading along' with the child. They might also develop skills in the use of prompts in reading, including giving the child time to sort out available information. This includes helping the child think about the meaning of the previous sentence, scanning to the end of the present sentence, and re-reading the beginning of the present sentence and thinking about the likely meaning of the word which is causing trouble. These are skills which the child may acquire with the help of a home tutor who herself has been trained in these specific areas. This implies that the acquisition of learning skills such as reading is not something that simply happens with time. Those skills are developed through a blend of incidental and explicit teaching.

5.3.6 As with reading there are definite skills in the area of writing and spelling which home tutors might acquire as a basis for assisting their children. In the very early years they include the techniques of how to record children's own dictated stories, and how to respond to those efforts. They also include skills in helping older children write and edit their own stories. Included among those skills is an understanding of what is acceptable in children's writing and what responses might be made to it.

5.3.7 The intention is not to turn home tutors into fully-fledged teachers. That is neither necessary nor feasible given their other commitments. Introductory teaching skills in language and literacy, such as those mentioned above, can be imparted to parents through workshops over a period of two or three weeks. Where parents cannot attend such workshops they could be trained with the help of video and printed materials in their own homes. The point is that this study demonstrates that they need some support. Moreover, they are 'teachers' in the sense that they link the child to distance teaching materials. Consideration might therefore be given to the issue of whether satellite and other communications technology might be used to the benefit of home tutors. Given the effectiveness of parent training programs[6] it seems reasonable to assume that parents such as those studied in this research would benefit from such training transmitted via the most appropriate technology. In turn the learning programs of their children would be enhanced significantly.

5.4 THE PLACE OF COMMUNICATIONS TECHNOLOGY

5.4.1 Part of the condition of geographic isolation which characterises the lives of the people in this study is that they do not have access to communications systems which elsewhere might be taken for granted. Many

of them do not have even a reliable telephone service. They are dependent upon radio and mail services as their means of communication. It follows that the principal medium of their children's education is the printed word and its principal means of transmission is Australia Post. Even air lessons take up only a small part of the time given to schooling.

5.4.2 In recent years greater use has been made of audio and video cassette recorded curriculum materials. They are readily transported through the mail and offer useful one-to-one contact between child and teacher as well as extended opportunities for a richer curriculum. The effectiveness of these modes of distance teaching was not evaluated in this study. However, home tutors were asked in interviews about their uses of correspondence lessons, air lessons, video and audio tapes. As was noted previously, the video tapes in particular were regarded highly. Home tutors expressed firm appreciation of their value in the total education of the child. Even so, most often they regarded videos as additional or supplementary to the principal component of primary distance education, the correspondence lessons. Seldom were they seen as integral parts of those lessons.

5.4.3 This apparent lack of integration was noted with regard to air lessons as well. The opinions of the home tutors are summarised in Table 8. Only six of the thirty-four respondents who commented on the integration of air and correspondence lessons claimed that they had no difficulties in relating the separate components. The rest failed to see a link between them or, in two cases, observed that the integration imposed pressure to ensure that correspondence lessons were completed in a lock-step progression with the air lessons. This reduced opportunities for children to work at their own pace. It must be said that there was little support for this opinion. In the main, home tutors recognised a difficulty in integrating the two types of lessons because children have different rates of learning. The more popular opinion was that if integration were to be effective air lessons needed to be behind the correspondence lesson program so that learning might be consolidated. If they were ahead, the air lessons would have less impact.

5.4.4 Video materials were used as an 'out of school hours' activity, except when the viewing of particular programs was prescribed by teachers. The times when families viewed video materials are summarised in Table 9. They indicate that regardless of the source of electric

TABLE 8: PROBLEMS EXPERIENCED WITH INTEGRATION OF AIR LESSONS AND CORRESPONDENCE LESSONS

	NUMBER OF FAMILIES
Air lessons not seen to be integrated with correspondence lessons	20
Occasionally integrated, but most of time not	6
Integrated, but puts pressure on timing and pace of correspondence lessons	2
No problems experienced	6
TOTAL	34

TABLE 9: THE USE OF LOAN VIDEOS

SOURCE OF POWER	WHEN VIDEO USED	NUMBER OF FAMILIES
Own generator: run intermittently	Usually late afternoon or evening	13
Own generator: run continuously	Usually late afternoon or evening	11
	Every morning before lessons begin	1
	During schooltime as part of lessons	1
Rural power	Usually late afternoon or evening	7
	During schooltime as part of lessons	1
	TOTAL	34

power, either rural power or home generators run continuously or intermittently, thirty-one of thirty-four families used the video materials late in the afternoon or in the evening. Few attempted to relate them to correspondence lessons; some preferred to keep them for family viewing; and some used them to entertain the children while mother attended to other matters:

> 'Well, that video, I know they say don't watch the video from beginning to end. Well that is virtually impossible because I stick the video on, stick the kids in front of it and get tea. No worries. And they see the video sometimes two or three times'.

The more common answer to the question 'When do you use video?' was similar to what might be expected about broadcast television in urban homes.

> 'We usually watch that after school or usually when I'm putting on tea after they've had their baths'.

5.4.5 Attitudes to the value of audio tapes were less clear. Either the home tutors were indifferent or they had little experience of them. Some recollected using them in pre-school and year one, but were less certain about their functions in their current programs. Perhaps that was because air lessons offered better opportunities for spoken communication in these circumstances. The most valuable suggestion for the use of audio cassette recordings was to reduce the demand for written work. An eleven-year-old and her mother offered this reasoning:

> Pupil: 'Well, I like thinking up the stories, but I don't like writing them down.'
> Mother: 'She thoroughly objects to writing them down, but she does write good stories.'

Another gave a similar purpose, but was cautious about its acceptability:

> 'If the child has to write down a story which has flowed orally, it kills it... It's the time consumption also. You have a child like A... who would tell you a story that will go on and on and on, and it's a good story. It's worth listening to and it's worth taking down, but expecting him to write down four or five foolscap pages, that's a lot of writing and a lot of time consumption for a small child.
> Some teachers would accept it, some wouldn't. Some teachers would say it's a very poor substitute for written work... These kids don't have the opportunity to express themselves orally as children in a classroom possibly do. They're surrounded by us. We use the same format of oral communication all the time. They go somewhere else and it's different.'

5.5 PERCEPTIONS OF FUTURE USES OF TECHNOLOGY

5.5.1 Families have few real problems in using and appreciating radio and video, and many anticipated progress when primary distance education makes use of a satellite communications system:

> 'The Satellite could do so much to improve communication for our children and take some of the responsibility off our shoulders.'

> 'The Satellite, although expensive, can do good. Everything needs an initiative. The video was not accepted at first but it has done a lot for our children - they have a much wider knowledge of what goes on in the world now.'

A governess with considerable experience of schools of the air in two states was more circumspect about the value of communications technology:

> 'One thing I've always thought about school of the air, no matter where it is, unless they're teaching the kids something that normally they wouldn't learn, or that I can't teach them, or that they're giving the child something that they're not going to get in their classroom, the lesson's a waste of time... Unless the child gets something from the lesson, or learns something from the lesson, I think it's a waste of time.'

Others offered cautionary advice, one about overloading an already-crowded curriculum:

> 'If we're going to have Satellite Education as a separate input of education as well, people are just going to get so confused! At present, some families are doing too much school and therefore there is too much pressure on the kids.'

Another expressed concern that rather than expanding the intellectual horizons of geographically isolated children, the extended use of technology might serve to curtail existing opportunities for interaction.

> 'The more communication we have, the more isolated we become in lots of instances. I used to have to go to town every two weeks to do the shopping. Now I don't; I ring up, it's put on the bus and I go to D... to pick it up. I don't ever have to go to town.

> If they rely too heavily upon satellites or one-way video or two-way audio, I think we have to be very careful that we're not isolating the child even further.'

5.5.2 An interesting aspect of these perspectives on educational technology and its transmission through a satellite communications system is that they indicate that parents have thought little about it, or that they really have not been given good advice about what it might offer. None indicated that they had any clear idea of its potential. Most of them seemed to view it as an 'add-on' and as something which might even increase the pressure on children. They did not see it as having any potential for replacing some of the less personal channels of communication. It is of particular interest that some even saw that a satellite communications system might isolate their children even further. Clearly these concerns should be taken into account in developing curriculum materials to ensure that technology does not depersonalise the process of education. More important, however, is the need to ensure that parents are well informed about how communications technology can be used to enhance distance education and how they can incorporate it in teaching and learning in their homes.

5.5.3 The evidence that different materials are not being integrated into a total learning program has enormous implications for the development of new materials for transmission by electronic media. While it might be convenient to find fault with the way distance learning materials are handled in the homes, the reasons must be looked for elsewhere. The point was made in the previous chapter that home tutors are merely the 'facilitators' of the curriculum; all other responsibility for curriculum, in particular the selection, organisation and integration of content and processes, rests with distance education teachers and curriculum planners. It seems that not only do curriculum planners have to make appropriate assumptions about children's capacity to work independently, and their home tutors' skills to provide appropriate support, but they need to examine their assumptions about how the different modes of presenting learning materials are integrated in the field.

5.6 SOME SUGGESTIONS FOR THE FUTURE

5.6.1 How then might communications technology be used for educational purposes? It must be accepted at the outset that a satellite communications system can alleviate some of the problems identified in this report. For example, it will be possible to extend the national telecommunications network to users in even the most remote locations; audio transmission and reception will be enhanced under most circumstances, thereby reducing the variation in quality of existing

school of the air transmissions; and an Australia-wide television broadcast service will be provided through the Homestead and Community Broadcast Satellite Service (HACBSS). As home reception of satellite transmitted programs becomes widespread, remote communities and isolated users will be provided with increased opportunities for enriched educational programs. However, the potential will not be realised if specific matters of detail are overlooked.

5.6.2 The general improvement in the national communications services through the satellite system will not address fundamental problems of curriculum and teaching methods. The model of distance teaching presented at the beginning of this chapter and the problems identified in this and other studies might offer some directions for the future. Clearly, because electronic communications are distance indifferent, their use should be considered for enhancing the interaction between the distance teacher and the pupil, and for providing more efficient means of delivering learning materials and offering feedback from teacher to pupil. The analysis in this report of the way primary distance education materials are handled in the homes suggests that the following matters should be taken into account:

- the education services offered should be as flexible as possible in terms of timing and pace of learning; and
- each medium should be assigned clear functions, including information processing, instruction, problem solving, and providing feedback.

Flexibility in curriculum materials

5.6.3 It is a reasonable expectation that correspondence lessons will continue to be the principal mode of distance education for some time to come. Their relatively low cost and the continued use of written curriculum materials in conventional schools suggest that the printed word will endure. It has the additional advantage of enabling individual adaptation of learning materials. Correspondence lessons are amenable to variable time-tabling and individual rates of learning. This was confirmed in the observations presented in this study.

5.6.4 It was shown that three different aspects of time, as well as the differential rates of learning among individual pupils, have to be taken into account in the operation of distance education in the home. The daily time-table of lessons, the regular schedule of correspondence 'papers' or 'sets', and the annual program have to be accommodated in the general domestic routine and occupational activities of the family.

Several factors occasion needs for flexibility. These include competing demands upon human resources and the availability of supervision for lessons; annual activities organised by the schools; seasonal activities, annual projects, or regular events in the lives of families; or unexpected interruptions of the routine which have to be borne as part of the unpredictability of life. It was observed that in the urban classroom context where an employed governess was able to give her uninterrupted attention to lessons, the pattern of schooling was regular and predictable. In the modifed urban and integrated classroom contexts, where the dual roles of mother and home tutor sometimes had to be juggled, flexibility was most needed and most frequently observed. In those circumstances, schooling has to fit into the rural life style, and just as that is not always ruled by the clock or the calendar, but rather by the activity of the moment or the season, so too does time allocated to schooling have to be malleable.

5.6.5 Where flexibility of this kind prevails, attempts to impose rigid schedules can cause dysfunction. Tension created by competing demands usually is resolved by setting aside those aspects of schooling which are judged to be optional. The low priority given to video in the daily program of schooling might well be evidence of this. Pragmatic decisions to establish priorities of these kinds have to be made in the homes so that home tutors and the pupils can cope with what they deem to be important in the curriculum.

Discrete functions of communications media

5.6.6 It is generally acknowledged that each medium has its own instructional strengths. For example, radio is a cost-effective means of transmitting information; the power of television is in engaging the interest and arousing the awareness of the learner; and audio-teleconferencing using standard telephone equipment promotes dialogue among groups of learners. In educational terms, those instructional strengths should be exploited for their economy. Where it is possible to present learning materials more efficiently and effectively using one medium rather than another, and provided that it is logistically and financially feasible, then it is wasteful of resources not to do so. At the same time, however, it has been suggested that the medium must allow for flexible use. If it is to be effective in the context in which geographically isolated children work, it must be able to be used at variable times convenient to pupils and their home tutors, and it must be able to be modified and adapted to the particular needs and circumstances of individual learners.

5.6.7 The integration of materials presented through different media while at the same time allowing for flexibility in their use poses something of a problem. The evidence of the lack of integration between correspondence lessons, air lessons and loan video materials indicated that the effectiveness of the latter was weakened. Not only were video materials relegated to an 'after-school' or 'edutainment' activity, but they were regarded as an optional extra and their value for enriching learning experiences was overlooked. On the other hand, very close integration between different media, leading to the imposition of a relatively rigid study sequence, should be avoided. Evidence of dysfunction was observed where attempts had been made to integrate air lessons and correspondence lessons. Either additional pressure was exerted so that correspondence lessons were completed in a lock-step progression with air lessons, or the air lessons were rendered less effective because pupils had not done the complementary work in the correspondence sets.

5.6.8 It is reasonable to conjecture that rigid schedules of educational television broadcasts integrated with other computer-linked facilities for instruction, for example, would be similarly dysfunctional. Regardless of the particular instructional strength of the medium, its effectiveness would be weakened simply by its having to be used at times inappropriate to the learner. Clearly, such integration through rigid scheduling would not work in many of the situations observed in this study. Other more flexible procedures need to be considered. For example, learning materials might be transmitted on a regular schedule but be recorded in the home for use at the most appropriate time. Hence, the particular medium might be used for its instructional strength, but the timing of its use as an aid to learning would be decided by the pupil and the home tutor. The singular advantage of recorded materials is that control rests with the learner; they can be played, and replayed, at his or her will. This can only reinforce the instructional strength.

Improving the quality of instruction

5.6.9 It has been demonstrated that some aspects of distance teaching are not handled well in conventional correspondence programs. Print is not an efficient medium for stimulating the interest of children nor for motivating their learning; there are recurring problems among pupils at all levels in their understanding of written instructions; and feedback from teachers is delayed and therefore less effective. Clearly, computer-assisted information processing and data transmission systems

might be exploited to good effect in resolving these problems. Two of them, in particular, should be given priority in planning for the use of communications technology. If the quality of instruction in primary distance education is to be improved, attention must be paid to instructional cues in the learning materials and feedback from distance teachers.

5.6.10 Home tutors reported that pupils at all levels had persistent problems in understanding written instructions, but notably less problems in understanding oral instructions. Conventional wisdom might suggest that the pupils had not developed appropriate reading skills. Alternatively, it might be suggested that the language and expression of written instructions was too difficult. Certainly, these reasons were offered by home tutors. It may be, however, that written verbal cues for learning tasks are not always appropriate for all pupils. It was observed that where home tutors translated the written verbal cues into spoken cues, analogies, diagrams or illustrations, or acted out the instructions with pupils, their understanding was much more immediate. Here, the quality of instruction depended not upon the clarity of the written word but rather upon the skill of the home tutor in devising alternatives. Often they used intuitively knowledge about the way children learn. In a conventional classroom, cues for instruction are presented in different forms, some verbal, some pictorial or graphic, and others enactive, to cater for the individual differences of children. Each is different in cognitive style and preferred modes of learning. The same principle can be applied to distance teaching. Alternative cues can reinforce written instructions by exploiting the strengths of other media.

5.6.11 The other major aspect of the home tutor's function in distance teaching was in responding and reacting to the children's work. Their feedback took a variety of forms of praise, reinforcement, or correction, but it was always immediate. The responses of the distance teachers similarly took different forms, but it was always delayed. The opinions reported in this study suggest that teacher feedback was less effective. Again a fundamental principle of school learning might be observed here. Feedback is most effective if it is immediate at the time of learning. In conventional distance teaching that is not possible, except for the intercession of the home tutor. Electronic mailing techniques and telecommunications now make it possible for the interaction between the distance teacher and the pupil to be immediate.

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APPENDIX A

The Research Instruments

Interview Schedule
Lesson Observation
Daily Diary of Lessons

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Government of
Western Australia

THE CHILD AS AN ISOLATED LEARNER

HOME TUTOR
INTERVIEW SCHEDULE

1984

NOTE: The purpose of this research is to investigate how children learn in isolated situations.

The questions I will ask are in six areas:

(1) The family background

(2) Who tutors the child?

(3) How is time managed?

(4) What does the home tutor do?

(5) What does the child do?

(6) What does the school of the air/correspondence school teacher do?

PART A : THE FAMILY

(This part to be completed before the interview)

	AGE	SEX	DISABILITY	COMPLETED EDUCATION	CURRENT EDUCATION
MOTHER					
FATHER					
ELDEST CHILD					
2nd "					
3rd "					
4th "					
5th "					
6th "					
7th "					
8th "					
9th "					
10th "					

NOTES: (i) if it is a one-parent family show 'D' for deceased parent or 'E' for estranged parent not living at home.

(ii) DISABILITY: indicate type of disability (eg. sight, speech, intellect, physical) only if it might affect the child's education.

(iii) COMPLETED EDUCATION: P 1-7, S3-10 or T (tertiary)

(iv) CURRENT EDUCATION: P 1-7, S8-10, or T (tertiary). Asterisk SOTA CHILD/CHILDREN

CHILDREN AT HOME ENROLLED WITH THE _____ SCHOOL OF THE AIR

	ELDEST CHILD	2ND CHILD	3RD CHILD	4TH CHILD
CHILD'S NAME.				
DATE OF BIRTH				
YEAR LEVEL 1984				
YEARS AS SOTA LEARNER				
PREVIOUS SCHOOLS				
YEARS ATTENDED				

ANY SPECIAL CIRCUMSTANCES? (Health, General Intelligence, Disabilities, etc.)

PART B: THE FAMILY HOME

(This part to be completed before the interview)

Which of the following best describes the family home?

(a) mobile dwelling
(eg. caravan, boat, campervan) ☐

(b) permanent dwelling
(eg. homestead, house, flat) ☐

(c) temporary dwelling
(eg. shed, tent) ☐

How far is the family home from the SOTA (Meekatharra, Kalgoorlie, Katherine, Charleville)?

_____ miles

or

_____ kms.

Where in the home are correspondence lessons usually done?

(a) in a special room used only for schoolwork
(ie. schoolroom) ☐

(b) in part of a room with a space set aside
and furnished as a permanent schoolwork area
(eg. child's bedroom) ☐

(c) in part of a room at a table that is used for
other purposes as well (eg. kitchen table) ☐

(d) somewhere else (please describe _____
_____) ☐

PART C: THE INTERVIEW SCHEDULE

NOTE:

1. All information supplied will be regarded as strictly confidential and will be used only for the purposes of research.

   Nothing will be divulged in any form which reveals the identity of the children or the families who are cooperating in this project.

2. All interviews will be taped, with the permission of the respondent, and with the usual undertakings about confidentiality of information.

3. The home tutor is to be interviewed. If the mother is not the home tutor she should be interviewed separately. The views of the father should be sought also.

C1 WHO TUTORS THE CHILD?

1.1 What is your relationship to the pupil?

- Mother ☐
- Father ☐
- Governess/Tutor ☐
- Sister/Brother ☐
- Other (eg. grandparent) SPECIFY _____ ☐

1.2 Do any other people OFTEN supervise correspondence lessons?

- No ☐
- Mother ☐
- Father ☐
- Governess/Tutor ☐
- Sister/Brother ☐
- Other (eg. grandparent) SPECIFY _____ ☐

PROBE: Frequency, circumstances, etc.

_____

_____

_____

1.3. What was the highest level of education you completed? Did you do any of your schooling by correspondence or in a country school?

		Level	Corres	Country	City
Primary	1-4				
"	5-7				
Secondary -	8-10				
"	11-12				
Tertiary					

1.4 Do you have any special qualifications (such as music, nursing, teaching, etc)
SPECIFY: _____

_____

1.5 How much previous experience have you had as a home tutor?

No previous experience	
Less than one year	
Number of years	
Number of children	
Levels (Years) of schooling	

PROBE any other teaching experience _____

_____

_____

_____

_____

C2 HOW IS TIME MANAGED?

2.1 Would you describe for me how a typical school week is organised?

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
START					
FINISH					

NOTE:
(i) show fixed times, e.g. air lessons, smoko, lunch, radio broadcasts,etc.

(ii) show starting and finishing times for subjects, e.g. English, Mathematics, etc.

(iii) complete a separate sheet for each child, noting how their separate activities are organised/managed.

COMMENTS: _____

_____

_____

2.2 Why do/don't you have a time-table? _____

_____

_____

2.3 How is this fitted into competing demands during a normal day (eg. housework, yardwork, etc)? _____

_____

_____

_____

2.4 Are there any major activities during the year (such as the wet season, shearing, show week, and so on) which affect your program of schoolwork?

PROBE

_____

_____

_____

_____

2.5 What regular activities in SOTA calendar, (eg. camps, musters - Qld) interrupt your schoolwork?

_____

_____

_____

_____

2.6 Other than seasonal factors, what are the unplanned interruptions to _____'s (child's name) school day? (e.g. unexpected visitors, urgent repairs to mills,etc.)

_____

_____

_____

_____

2.7 Do you make up time lost on schooling by these interruptions?

YES

NO

If so, how?

PROBE _____

_____

_____

WHAT DOES THE HOME TUTOR DO?

3.1 What do you do as home tutor?

BEFORE

PREPARING (selecting, familiarising, sequencing)

ORGANISING (materials, time, space, child)

DURING

GIVING INSTRUCTIONS (interpreting, directing, advising)

PARTICIPATING (reacting, role playing, responding)

SUPERVISING (persistence, pace, problem solving)

AFTER

CORRECTING (shaping, praising, identifying errors)

ENRICHING/REMEDIATING/CONSOLIDATING (eg. going over corrected work returned from SOTA)

DESPATCHING

3.2 Would you tell me about your use of the following learning materials? Do you have any difficulties with them?

CORRESPONDENCE LESSON MATERIALS (level of difficulty? interpreting instructions? maintaining interest?)

AIR LESSONS (reception?, integration with written? etc)

VIDEO (generator power? integration with sets/units? etc.)

AUDIO TAPES

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C4 WHAT DOES THE CHILD DO?

4.1 How often does _____(child's name) work unattended (i.e. with you out of the schoolroom)

- all of the time ☐
- most of the time ☐
- some of the time ☐
- rarely ☐
- never ☐

PROBE CIRCUMSTANCES _____

_____

_____

PROBE ACTIVITIES _____

_____

_____

PROBE EFFECTIVENESS _____

_____

_____

4.2 How often does _____(child's name) work alone but with you in attendance?

- all of the time ☐
- most of the time ☐
- some of the time ☐
- rarely ☐
- never ☐

PROBE CIRCUMSTANCES _____

_____

_____

PROBE ACTIVITIES _____

_____

PROBE EFFECTIVENESS _____

_____

_____

4.3 At what age have your children become less dependent on you for help with their schoolwork?

PROBE reading, concentration, etc._____

_____

_____

_____

_____

4.4 What proportion of time spent on lessons is usually devoted to each of the following?

Doing work to be returned to the SOTA/PCS teacher?

ENGLISH _____

MATHS _____

OTHERS _____

Doing set activities which don't have to be returned to the SOTA/PCS teacher

ENGLISH _____

MATHS _____

OTHERS _____

4.5 How often do any of the following cause persistent problems in _____'s (child's name) schoolwork?

UNDERSTANDING ORAL INSTRUCTIONS

all of the time	
most of the time	
some of the time	
rarely	
never	

PROBE _____

_____

_____

UNDERSTANDING WRITTEN INSTRUCTIONS

all of the time ☐

most of the time ☐

some of the time ☐

rarely ☐

never ☐

PROBE _____

_____

ORGANISING HIMSELF/HERSELF TO WORK

all of the time ☐

most of the time ☐

some of the time ☐

rarely ☐

never ☐

PROBE _____

_____

_____

PERSISTING WITH SET TASK (Concentrating)

all of the time ☐

most of the time ☐

some of the time ☐

rarely ☐

never ☐

PROBE _____

_____

_____

SELF CORRECTION

- all of the time ☐
- most of the time ☐
- some of the time ☐
- rarely ☐
- never ☐

PROBE

_____

_____

_____

COMPLETING SET TASKS IN REASONABLE TIME

- all of the time ☐
- most of the time ☐
- some of the time ☐
- rarely ☐
- never ☐

PROBE _____

_____

_____

C5 WHAT DOES THE SOTA/PCS TEACHER DO?

5.1 What part do the following play in distance education?

	PCS	SOTA	ITINERANT
PROBE ADVICE/INSTRUCTIONS	_____	_____	_____
	_____	_____	_____
	_____	_____	_____
	_____	_____	_____
PROBE RESPONSE TO WORK SUBMITTED			
	_____	_____	_____
	_____	_____	_____
	_____	_____	_____
PROBE ADDITIONAL MATERIAL (ENRICHMENT/REMEDIATION)			
	_____	_____	_____
	_____	_____	_____
	_____	_____	_____

C6 ANYTHING ELSE

Are there any other matters about _____'s schoolwork which we haven't discussed that you would like to talk about?

National Centre for Research on Rural Education

THE UNIVERSITY OF WESTERN AUSTRALIA
NEDLANDS
WESTERN AUSTRALIA 6009
TELEPHONE (09) 380 2389 TELEX AA 92992

University of
Western Australia

Government of
Western Australia

THE CHILD AS AN ISOLATED LEARNER

LESSON OBSERVATION

NAME:

FOR COMPLETION BY THE RESEARCH ASSISTANT

CHILD'S NAME: _____ **TUTOR'S NAME:** _____

PLACE: _____ **DAY/DATE** _____

ENGLISH

LESSON: SET _____ DAY _____ EXERCISE _____

TIME : COMMENCED _____ FINISHED _____ LAPSED _____

DESCRIPTION OF TASK	WHAT PUPIL DID	PUPIL-TUTOR TOGETHER	WHAT TUTOR DID	WHAT SIBLING DID
PREPARATION				
ACTIVITIES				

CHILD'S NAME: _____ **TUTOR'S NAME:** _____

PLACE: _____ **DAY/DATE** _____

MATHEMATICS

LESSON: SET _____ DAY _____ EXERCISE _____

TIME : COMMENCED _____ FINISHED _____ LAPSED _____

DESCRIPTION OF TASK	WHAT PUPIL DID	PUPIL-TUTOR TOGETHER	WHAT TUTOR DID	WHAT SIBLING DID
PREPARATION				
ACTIVITIES				

CHILD'S NAME: _____ **TUTOR'S NAME:** _____

PLACE: _____ **DAY/DATE** _____

AIR LESSON

LESSON: SET _____ DAY _____ EXERCISE _____

TIME : COMMENCED _____ FINISHED _____ LAPSED _____

DESCRIPTION OF TASK	WHAT PUPIL DID	PUPIL-TUTOR TOGETHER	WHAT TUTOR DID	WHAT SIBLING DID
PREPARATION				
ACTIVITIES				

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DIARY OF ACTIVITIES
OF HOME TUTOR/STUDENT

MONDAY-FRIDAY

NAME:

TO BE COMPLETED AND RETURNED TO THE ABOVE CENTRE

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MONDAY: 14-5-84.....

BEFORE DOING SCHOOL:

TIME	LESSON	WHAT HOME TUTOR DID (Please give full details of the day's activities)
8.00	NEWS	S, P, Q, & Q all drew and coloured pictures of the news of the weekend. We then discussed the type of day and recorded this on the chart - Sunny
8.30 - 8.45	School of the air	S & P told the Q about our visit to the ewing and then drew a picture of themselves in their clothes they had on and described them to her. Q & Q coloured patterns eg. △○□ etc.
8.45	language arts	exercises in speaking - poem, repeating lines after me - breathing. Then we did some patterns that they had to make again from memory. work Book. Reading flash cards and reading sentences. S read to Q & Q while I did some work book work P. Rhyming words then some phonics in form of a game - spin the pencil. Writing exercise in work book a on paper for me. More reading then work from 'My Phonic Reading book'. Q & Q. did some painting and drawing.
10.00 10.30 - 12.15	SMOKO MATHS	Played BINGO with four of them. Then had counting work to 25 by ones & Toos. Worked with sticks making sets up to 14. Went through 1ST and etc and did work book exercises - more counting. Tried to track Q to count - got him to five!
12.15 12.45	Reading stories & asking questions	Read to the four of them & asked questions about the stories & what they thought would happen. Then gave up.

AFTER SCHOOL Extra children went home.

Made jam

The rest of us went for a walk & counted the sticks we picked up from the new road. Then we counted the bull frogs we found in the sand by the river.

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MONDAY.. 15-5-84....

BEFORE DOING SCHOOL: played on bicycle after breakfast

TIME	LESSON	WHAT STUDENT DID (Please give full details of the day's activities)
8.00	NEWS	drew picture of the circus tent put up todays name + filled in weather chart
8.30	school of the air	told Miss G. about going to the circus and having a picnic for Mothers day.
9.00	language Arts	repeated poem, breathing exercises. Reconstructed patterns of objects. Read flash cards + sentences. he read his book to Jason + G. Told me words that rhyme.
		Played Phonics game and wrote the words he forms. Writing exercise. Phonics.
10.30	MATHS	Played BINGO. Counted to 25 by 1's + 2's Made sets up to 14. Ordinal counted. Work book. More counting.
12.15	Reading + comprehension	he listened to stories and answered questions about them.

AFTER SCHOOL

had sleep.

↙ Same

Watched school video with D, Mummy, Daddy P. et al

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TUESDAY .15:.5:.84.....

BEFORE DOING SCHOOL: cleaned kitchen

TIME	LESSON	WHAT SOME TUTOR DID (Please give full details of the day's activities)
8.00	CRAFT	Showed S & Q how to make card board people
8.20	NOTICES ON AIR	listened to notices and made sure S was ready for school of the air.
8.30	School of the air	Helped Q to do number Bingo as S did it - showed Q how to count 1st, 2nd etc with pictures of fruit. Got him to colour the fruit and draw some more.
9.00	language Arts	Questioned S on picture on canvas - trying to get him to make up the story. Got out flash cards. Heard slow reading. Set Q up painting
9.30	PHONICS	S & J did endings of words - then he had to do exercise in work book. Wrote sentences on board for Q to copy. Did more phonics with S. Wrote sentences for S to copy for his letters for writing practice.
10.15	SMOKO	
10.45	MATHS	Set S up counting then helped him to count to 60 with number card. Asked him about 'one more' 'one less'. Worked with 1st, 2nd etc
12.00	Social Studies	Set Q counting with counters and board chart. She did another painting. Made up weather dial and worked out with Q the day, weather, season and month.
12.30	CRAFT	Boys made an aquatic

AFTER SCHOOL

Prepared some things for Q to do in school tomorrow.

Made lemonade and other cooking Watered garden

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TUESDAY..15:5:84...

BEFORE DOING SCHOOL: played on bicycles

TIME	LESSON	WHAT STUDENT DID (Please give full details of the day's activities)
8.00	CRAFT	made embossed people and wrote words on them. prepared bit sheet for Bingo for school of the air. marked off weather chart
8.30 - 9.00	school of the air	number Bingo - ordinal counting - he had to count backwards from 10. exercises in left and right.
9.00	language skills	Discussed picture on front of paper - 3 answered questions about what was happening, where they were going etc. Read flash cards. Read some sentences and discussed pictures. Read from reading book.
9.30	PHONICS	practice - final sounds - he supplied the end sounds to words to match pictures in work book. Read another page of My Phonic Reading Book. Wrote a letter to his Aunt & Uncle instead of writing practice.
10.15 - 10.45	SMOKO	played in sand pump
10.45	MATHS	counted to twenty - nine Then by 2s to 60, with help. Answered questions about 'one more' 'one less'. More questions on ordinal counting.
12.00	SOCIAL STUDIES	he cut out clothes for man & boy dressed in work book - told me why it was autumn and he told me about other seasons.
11.30	CRAFT	made monster with no evidence at all

AFTER SCHOOL had sleep after lunch
Helped water garden and measured out some things for my cooking.
rode bicycles and played in sand + and
Watched video as on Monday night.

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WEDNESDAY 16-5-84

BEFORE DOING SCHOOL: cleaned

TIME	LESSON	WHAT HOME TUTOR DID (Please give full details of the day's activities)
8 00	drawing colouring	encouraged them to do drawing and colouring discussed the weather and helped S get his things ready for school of the air.
8·30	school of the air	Set Q up to draw a pond with numbers on the stones. Wrote words and sentences for Q to copy
9·00	language arts	Showed boys pictures & asked what was wrong with them. Read poem and asked questions about it. Went through flash cards and sentences with S. Q worked a red picture with his rods. S did writing.
9 30		S found 'c' & 'f' sheets & read on the words - worked exercise by himself with first sounds of pictures, wrote letter for the sounds. We all did rhythmical clapping. Rearranged sentences with S. Q wrote letter with help.
10 20	MATHS	asked S to count by 2's to 25. Then we had new work (doubling) and made sets of one etc to five and doubled them. Went back relevant to this exercise. Wrote number names on board and
12·00	CRAFT	mixed them up. got S to write the names and correct number for each. helped S to make 1st cut for mobile and to gather & cut out things for craft for School of the air

AFTER SCHOOL had lunch made jam

Took kids for a walk, carried lots of grasses home.

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WEDNESDAY 16-5-84.

BEFORE DOING SCHOOL:

TIME	LESSON	WHAT STUDENT DID (Please give full details of the day's activities)
8.00	drawing colouring	He did drawing and colouring with G Filled in his weather chart and talked about the weather and changed the name of today on the wall poster.
8.30	School of the air	S told the class about the weather. He answered a rhyming sentence for her.
9.00	language lab	Observing differences in pictures - answered questions about a person. He used flash cards and sentences. Writing practice.
9.30	"	found sheets for C + P and read the words. matched the beginning sounds of pictures rhythmical patterns of clapping. put sentences back into order. Reading flash cards and book. Phonics
10.30	MATHS	counted beg 2's to 20 made sets and learnt to double them. up to doubling 5. did exercises in work book. Wrote on board words for numbers to 5 Counting practice
12.00	CRAFT	STARTED work on CAT mobile - cut out and painted cat shapes cut out shapes and got things ready for craft for tomorrow school of the air
AFTER SCHOOL		had lunch + sleep - read national geographic

Went for a walk + picked different grasses to make dried arrangements. rode bicycle.

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THURSDAY..17:5:84....

BEFORE DOING SCHOOL: cleaning

TIME	LESSON	WHAT HOME TUTOR DID (Please give full details of the day's activities)
8.00	art	showed them how to make the picture J wanted. Discussed weather and name of today.
8.20	NOTICES	Took notes
8.30	School of the air	Helped Q to do the same activity as S. - make a pig puppet.
9.00	language Arts	Read poem - went through sounds with boys
		Q had to finish his puppet. Put things out for observing for S got out flash cards + reading book. Wrote some words for Q and explained them to him.
10.00 10.30	SMOKO language arts	got out flash cards + phonic reading book, went through with Stephen. Cut out another pig for Q to make another puppet. Explained 'DOING WORDS' with S. - asked him for some more. Made up sentences for him to find the 'doing word'.
11.00	MATHS	Set S to counting and asked Q some questions on counting. Went through doubling a number with Stephen.
12.30	reading	Read a story about the circus to them and asked questions about it.

AFTER SCHOOL Soiled washing - got boys to put away clothes. Ironing. watering garden

Watched new school video after dinner with boys. After boys went to bed B + D watched the whole lot and were quite disappointed when it finished.

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THURSDAY..17:.5:84..

BEFORE DOING SCHOOL: took sheets off his bed

TIME	LESSON	WHAT STUDENT DID (Please give full details of the day's activities)
8.00	art	cut out and pasted bits to make a collage named the day and wrote up his weather chart
8.30	school of the air	told Mrs G what rides there are at the show. " " " that there were bullocks at the show.
9.00	language arts	Made pig puppet while he listened to the story of PIG. repeated poem and practised saying 'oo' sounds observing. studied picture of cupboard and decided who owned the things in each shelf. Then, by memory, put the objects on correct shelf in work book. Read Flash Cards. Reading in which he underlined 4 select words. Read from reading book.
10.00	smoko	Matched words with same final sounds. did exercise in work book. Supplied words to fil spaces in sentences.
10.30	language arts	Flash cards, Phonics, discussed doing words and told me some more.
11.00	MATHS	went through all his counting charts and counted each aloud. Made more sets and doubled them - then told the finished number.
12.30	listening	listened to story on cd/cas and answered questions

AFTER SCHOOL Sleep. Put away their clothes. Went for a walk with D and little kids. Rode bicycle

Watched new school video tape after tea.

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FRIDAY. 18-5-84...

BEFORE DOING SCHOOL: cleaned kitchen

TIME	LESSON	WHAT HOME TUTOR DID (Please give full details of the day's activities)
8.20	language Acts	Explained to S about patterns of letters he went ahead then. Wrote some sentences for Q to copy for a letter. He also did a painting to put in with it
		Read poem to them and got them to repeat lines after me. Got flash cards out for S to read, had him read to me. Then the TOOTH came out so decorated fairy & money with them. Went Through T.
		Sounds with S - I said words while he clapped for 'T' words. Q. joined in too. Showed S. pictures told him to write 'f' on all words that started with that sound. Q told me a story from a book. Gave
		some sentences to S for him to complete. work in work book, he wrote a sentence. Read a story to S. for him to supply the ending - had him draw a picture of it in work book.
10.00	SMOKO	
10.30	MATHS	Put out sets of pictures for S to arrange in order. Asked him to get counters out to make sets and had him double them up to 5
		Showed him picture with numbers to 19, asked him to colour 2, 4, 6 etc. Worked with 'greater' and 'fewer'. Then filled in numbers for results of joining and taking away sets.
12.30	reading	Had S. read. Then I read and asked questions.

AFTER SCHOOL

Cooking, sewing etc

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FRIDAY..15.-5.-84....

BEFORE DOING SCHOOL: rode bicycle

TIME	LESSON	WHAT STUDENT DID (Please give full details of the day's activities)
8.20	language arts	No school of the air today - Charleville show day.
		looked for patterns of letters in words. put sing sound all (by) & (it) that occurred together.
		listened to a poem and repeated lines. read flash cards and 6 sentences LOOSE TOOTH CAME OUT - discussed tooth fairy.
		Revised 'T' sounds - clapped every time he heard a word starting with 'T'.
		Phonics - found all words starting with 'F' in picture and wrote on them
		Decided which sentence matched which picture
10.00	Bimcko	and wrote one of them in work book. Completed sentences with missing words. Supplied ending to a story and drew picture of it in work book. Wrote letter.
10.30	MATHS	Put series of pictures in correct sequence.
		Made sets and doubled them. Told me result. Coloured in 2,4,6 et of pictures to 19. Circled pictures with fewer things and then the same with greater.
		joined sets and told me new number took sets away and told me new numbers
12.30	reading	S read story to younger children then listened to another story.

AFTER SCHOOL slept. Went for a walk Then rode bicycle and played in sand castle.

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APPENDIX B

The Families Studied

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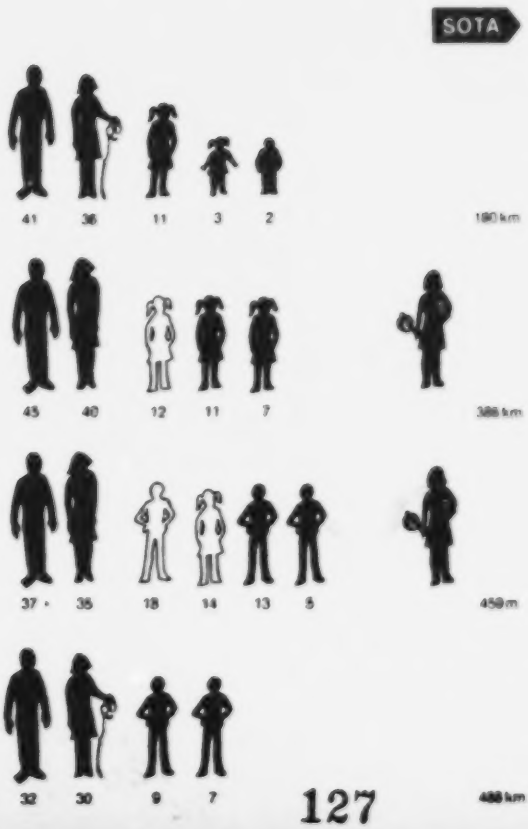
APPENDIX B: THE FAMILIES STUDIES
KEY:



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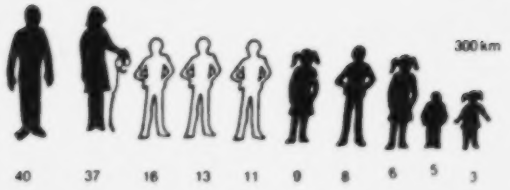
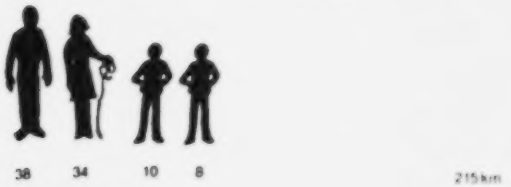
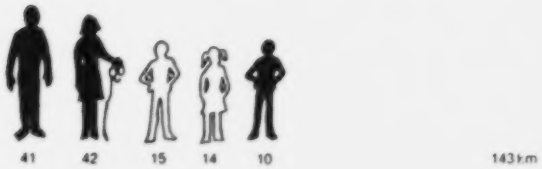
SOTA



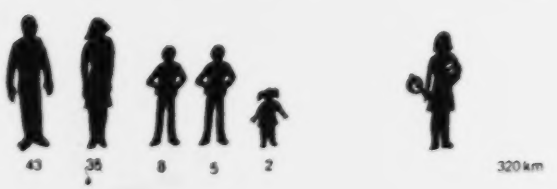


SOTA



SOTA

SOTA



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SOTA

144 km

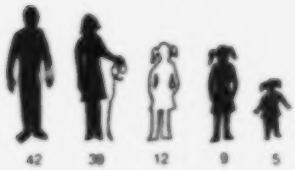
144 km

177 km

254 km

SOTA

290 km



105 km

185 km

180 km

SOTA

370 km

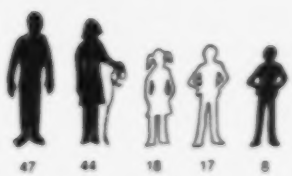
460 km

300 km

250 km

SOTA

341 km



60 km

160 km

230 km

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APPENDIX C

Daily Schedules of Schoolwork for the Thirty-Six Families

APPENDIX C: DAILY SCHEDULES OF SCHOOLWORK FOR THE THIRTY-SIX FAMILIES

KEY: LUNCH

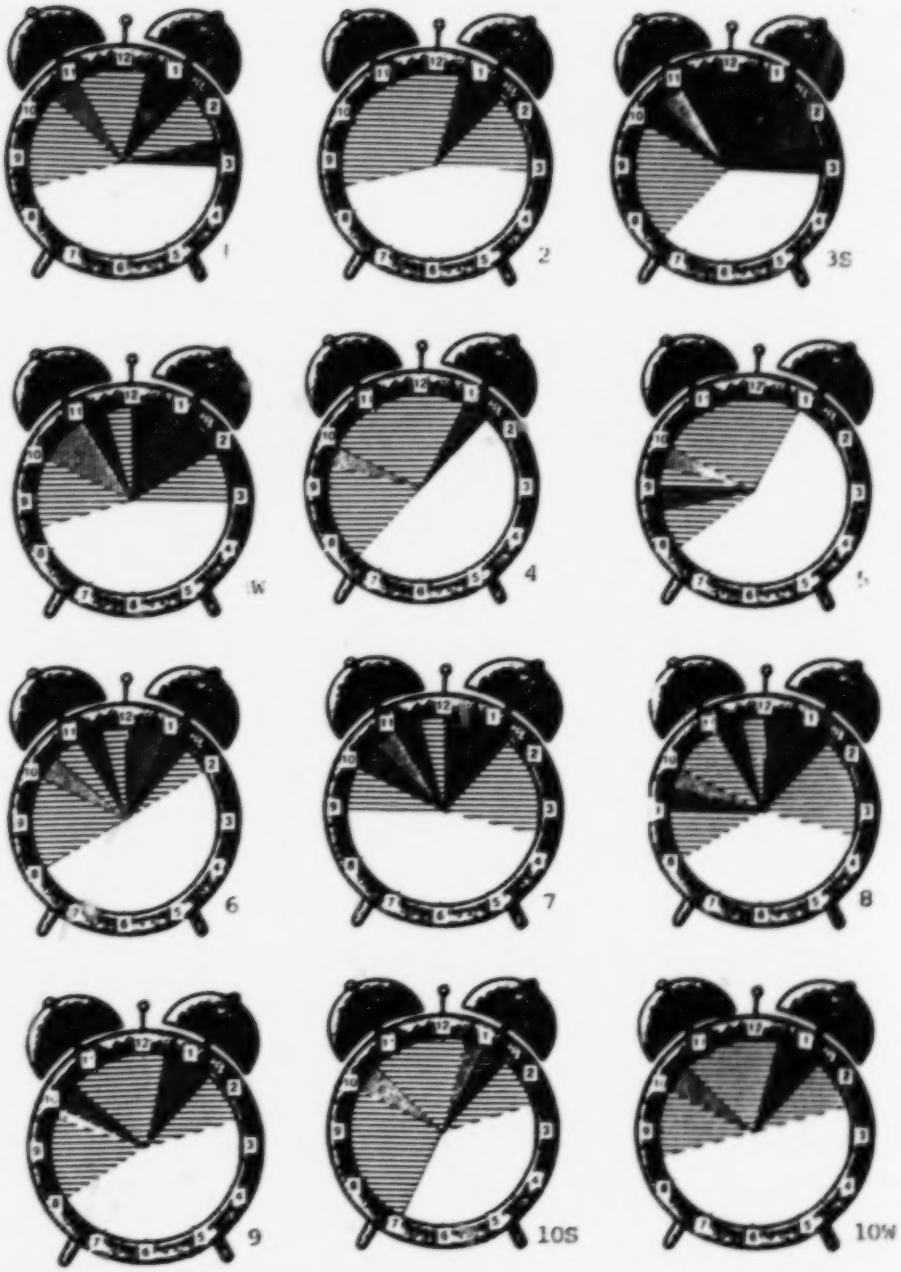
SMOKO

AIR LESSONS

LESSONS

S = SUMMER

W = WINTER



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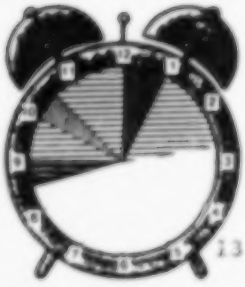

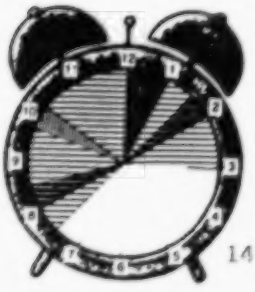

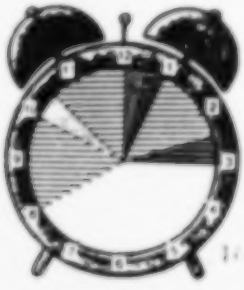

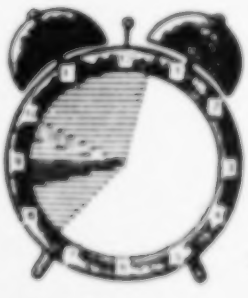

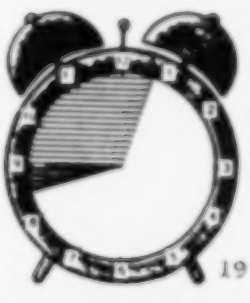

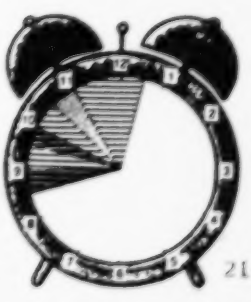

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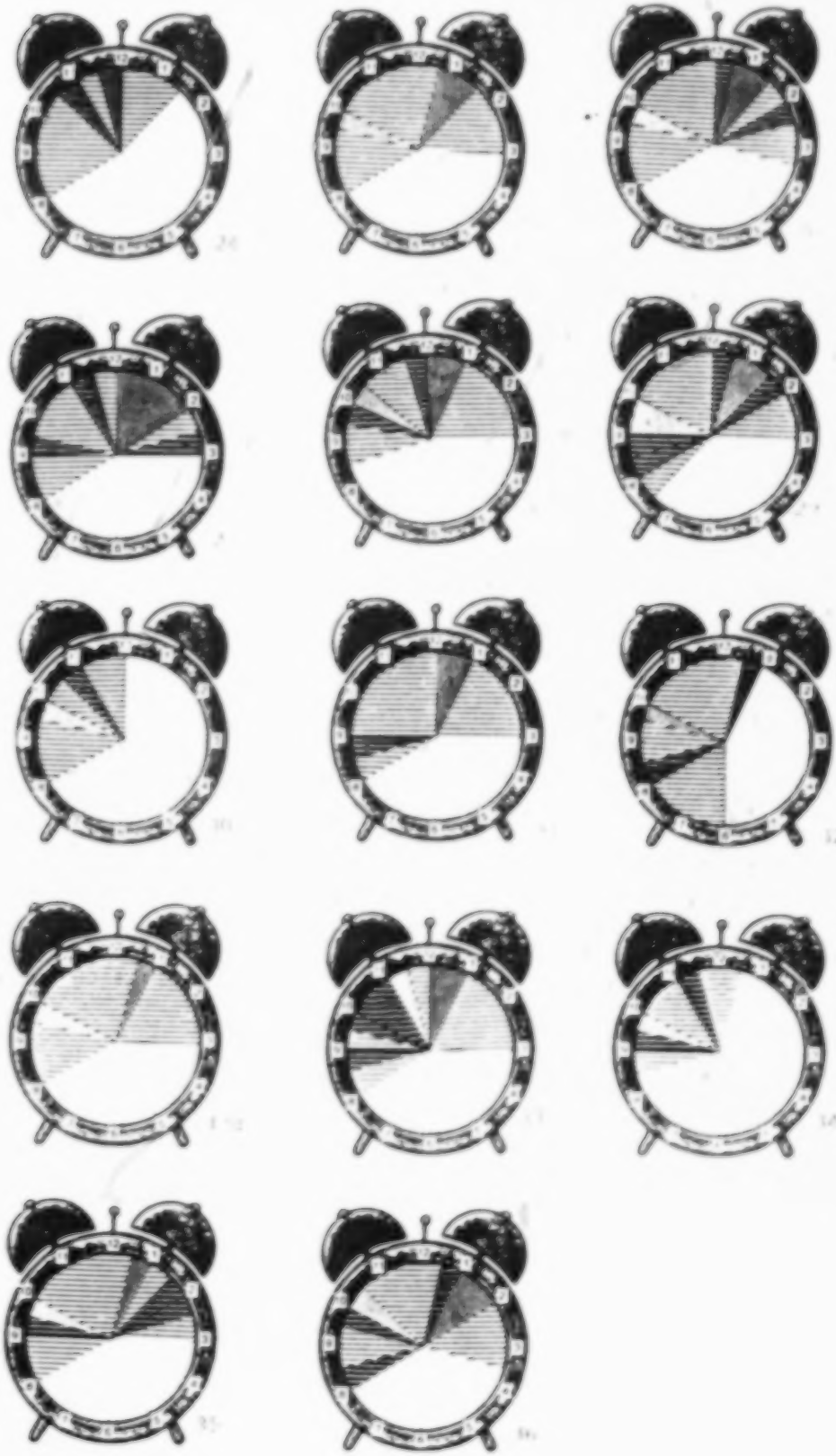

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